25X1

25X1

GUIDE TO MATRICULATION IN THE HIGHER INSTITUTIONS OF LEARNING, 1954 SUMMER ENROLLMENT

Nien Shu-Ch'I Kao-Teng Hsueh-Hsiao (Chao-Sheng) Sheng-Hsueh Chih-Tao 1954 /Guide to the Matriculation in the Higher Institutions of Learning, 1954 Summer Enrollment/ Peiping, 1954, pp 1-172, 214-243.

Unsigned Articles

TECHNOLOGY

Following the general line and the general tasks of the transitional period of our government, China since 1953 has entered a period of large scale planned economic construction. All our efforts are directed toward rapidly industrializing China along socialist lines, especially in heavy industry. A very significant task of this period is to train many highly qualified scientific industrial construction experts. As comrade Stalin said: 'Any task, especially a great one like the industrialization of our country, cannot be realized without energetic men, new men and new cadres" (report to the active members of the Leningrad party organization on the accomplishments of the 13 April 1926 central plenary meeting of the CPSU). Therefore, the fundamental task of the First Five-Year Plan is to concentrate our strength to develop heavy industry as well as to train industrial construction experts. The national higher technological institutes bear the main responsibility for training and supplying highly qualified industrial experts.

Hence, their fundamental task is to meet the demands of general national policy: to train concurrently according to plan and preparation various types of industrial construction experts who will be able to promote national industrialization along socialist lines and effect a socialist reformation. These experts

must be healthy, highly patriotic and of definite Marxist-Leninist thinking level, and they must be able to master advanced scientific technology. This task is glorious and at the same time difficult.

To accomplish the above-mentioned tasks efficiently, our higher institutions of learning in the past few years, following the experience of the Soviet Union have undertaken a series of restoration, reorganization and reformation measures. Now, after colleges and the departments of various institutions of higher learning have undergone a thorough readjustment, all China has 38 higher technological institutes including 14 polytechnic institutes that offer mechanical engineering, electrical engineering, and civil engineering; 21 higher technological institutes that have one department and several special courses and 3 polytechnic institutes or higher institutes of technology. These institutes are located in large or medium sized cities or near factories or mines. Courses are well divided among all the institutes; each one specializes in one or several courses arranged according to the needs and concrete conditions of the time. In recent years their scope has also been greatly expanded. So far enrollment is 3.3 times the 1946 enrollment under Nationalist control. From now on all efforts will be made to develop it further. According to the Five-Year Plan, enrollment by 1957 will reach 7.5 times that of 1946. With regard to the quality and quantity of teaching, since all teachers and students zealously follow the Soviet Union's example and receive the sincere assistance of Soviet experts, the teaching system, the material taught, and the teaching method have all improved greatly. Hence, the quality and quantity of teaching have not only significantly improved, but they are improving further day by day.

To train various types of industrial construction experts according to plan, to train the correct number in each type of construction, and to assure that the experts trained by the higher technological institutes will be qualified for the needed construction projects, in 1952 all the higher technological institutes in reshaping their colleges and departments followed the Soviet Union's experience in training technical experts by establishing departments for specialized courses. In the nation's 38 higher technological institutes there are 100 full-term special courses (4-year courses) and 32 short-term special courses (2-year courses) open for enrollment this summer. These special courses are divided into 15 categories according to their specific nature: geology and surveying, mining and its management, dynamics, metallurgy, machinery and tool manufacture, manufacture of electrical machinery and electrical tools, chemical mechanics, food and seasoning, paper manufacture, timber finishing and forestry, light industry, surveying, designing, meteorology and hydrology, building and municipal engineering, transportation, communication, and special industry.

The various special courses to be offered in all China's higher educational institutes and how many students may enroll in each are all determined from the needs of China's industrial construction. The plan for training industrial technical cadres is geared to integrating the various special courses firmly with the division of labor, yet at the same time it also aims to relate the courses to each other. It is closely integrated with the country's construction demands. Consequently, failure in training any type of technical cadres will invariably affect the successful progress of national construction as a whole. Industrial education in old China not only was not geared to reality, it lacked content, was

poorly imparted, and was also too general, confused, and fragmentary. For example, geology, mining and petroleum refining were either not taught at all or only very inadequately. Besides, coal mining or civil engineering were not especially emphasized either. But judging from China's all-over industrial construction, experts in geology, mining, petroleum refining, coal mining and civil engineering, etc, are all important. Geological work is the first step in national industrial construction, and geologists are the vanguards of industrial construction. Therefore, a great lack of geological experts will result in inaccurate geological data and make it impossible to carry out construction, locate ferrous and nonferrous metals, coal deposits, and petroleum deposits. A lack of mining and metallurgical experts will make it impossible to mine China's rich resources; this will cause deficiencies of all kinds of ferrous and nonferrous metals and prevent the operation of the mechanical industry. A lack of coal mining and petroleum refining experts will prevent machines from operating. A great shortage of civil engineers will make it impossible to accomplish the fundamental task of construction on a grand scale. In view of such needs, after various colleges and departments had been reorganized, various special courses, including geology, mining, coal mining, petroleum refining and civil engineering have been greatly strengthened and several new technological institutes have been established. Moreover, these special courses and technological institutes will continue to be further strengthened and developed.

To train in time various types of industrial construction experts special courses in the higher technological institutes now generally require 4-year enrollment. A few institutes are experimenting with a 5-year enrollment system in order to train more

highly qualified experts and to obtain the experience needed to assist other institutes to convert to a 5-year system. These special courses aim to train engineers for various technical fields (the term "engineer" here applies to the title but not to the position of the graduates). To meet the urgent demands of national economic construction many institutes have established special short 2-year courses in addition to their other special courses. Such courses aim to provide more qualified technicians with a definite theoretical foundation and with advanced technological knowledge in their respective fields. After graduation, they are qualified to supervise workers in organizing production processes and to direct technical operations; they are able to bear part of the responsibility for the production unit in modern advanced industry. Because the short courses can supply many cadres in a comparatively short time, they are very important for accelerating national industrialization along socialist lines. Those students who enroll in short courses can go to their work posts ahead of schedule. To be able to join in national industrial construction is glorious. Besides, those who do will continue to improve themselves in their work. They also have many opportunities to study and to learn so that they may contribute further to China. Some people think short courses are not important, have no future, etc. They are obviously wrong.

Young comrades about to enroll in higher educational institutes through examination! China urgently needs you. We wish you would work harder, prepare your lessons seriously, and pay attention to your health. Select your area of specialization correctly so that you can successfully pass the entrance examination for the higher technological institutes and make yourself into the industrial

construction cadres China so badly needs. After graduation you can go to your industrial construction posts and join forces with all China's people who endeavor to industrialize the country along socialist lines in accordance with the general program for the period of national reform.

I. Geology and Surveying

(1) Mineral Geology and Surveying

In the process of industrializing China along socialist lines, the discovery of mineral deposits and the thorough search for data to be used for setting up industrial production are of primary importance. Even after the people's economy has been considerably developed and new deposits have been found, even after the production of mineral ores has reached the point where it increases year by year, constant discovery and search are needed as they were in the first stage of industrialization. This course aims to train the geological engineers China needs to solve problems relating to mineral ore deposits.

Much highly scientific, complex yet systematic work is needed to discover mineral ore producing areas and to collect through surveys data needed for setting up production. Geological engineers must not only master scientific theory on geology and understand the natural conditions of the mineral producing area, they must also master enough technical engineering knowledge so that they can plan and supervise actual surveying. Therefore, this department, besides offering fundamental science courses, has 2 divisions, one dealing with basic geology, the other with engineering. The former consists of general geology, mineralogy, crystallography, geochronic geology, ancient biology, tectonic geology, and geological mapping.

The latter consists of projection, geometry, mechanical drafting, mechanics, electrical engineering, etc. For the other courses, see the courses offered by the various special categories.

Those students who intend to major in this department must have a general interest in natural and technical science. They must have no serious health defect.

To satisfy the demands of the people's economic development we need many kinds of mineral materials. Every kind of mineral ore has its natural characteristics; these in turn will determine our method of surveying for them. The whole process of surveying comprises a series of complex operations. To complete this task a further division of labor is needed.

Hence this department is again divided into the following 3 special courses: (a) The geology of, and surveying for metallic and nonmetallic minerals. This course aims to train geological engineers in surveying for metallic and nonmetallic mineral deposits.

(b) The geology and surveying of the coal mine. This special course aims to train solid fuel deposit geological engineers. This mineral is the major power source needed in industrialization.

(c) Surveying of mineral geology. This special course aims to train geological engineers whose chief task will be to discover mineral deposits and give them a preliminary examination and estimation.

This special department has also established a related short course for training more qualified technicians.

(2) The Geology of, and Surveying for Petroleum and Natural Gas

With the development of large scale economic construction in China, the need for liquid fuel becomes more urgent day by day. China was originally rich in oil resources, but due to insufficient geological survey work in the past, the rich subterranean petroleum and natural gas resources were not fully used.

The department of geology and surveying of petroleum and natural gas exists to train engineers to specialize in surveying for, and doing research on natural resources of petroleum and natural gas. Their tasks are (1) to investigate the underground distribution of petroleum and natural gas; (2) to investigate the formation of the oil field and to ascertain the oil reserve layer and the problems of oil pressure, etc; (3) to ascertain the petroleum and natural gas reserves and to supply the geological data needed for oil field drilling, extraction and design; (4) to supervise extraction in the oil fields.

This department offers the following special courses: petroleum research, the geology of petroleum and natural gas, oil well drilling, petroleum and natural gas drilling, hydrogeology and oil field water, petroleum and natural gas investigation and surveying, geophysical surveying and productive geophysics.

This department's fundamental courses emphasize chemistry, analytical chemistry, physical chemistry, and organic chemistry. In addition this department includes general hydraulics and subterranean hydraulics, thermodynamics, and thermo-engineering.

(3) Geology and Surveying of Petroleum and Natural Gas

(2-Year Course)

Petroleum and natural gas geology is a new science. The petroleum industry is a heavy industry pertaining to national defense. It is of paramount importance for socialist construction in China.

The department concerned with geology and surveying for petroleum and natural gas exists to train more qualified technicians in petroleum surveying in China and in exploring so that industrialization along socialist lines may proceed, so that China's rich underground petroleum resources can be extracted and utilized for national defense and for other industries.

Besides fundamental Marxism-Leninism and the revolutionary history of China, this department offers the following basic courses: general geology, crystallography and mineralogy, petrology and sedimentary petrology, paleontology, the geology of China, measurement, etc. It offers the following special courses: petroleum and natural gas geology, petroleum and natural gas mining, investigating and surveying for petroleum and natural gas, drilling oil wells, surveying, safety techniques, fire prevention, etc.

(4) Geophysical Mining

The course in geophysical mining aims to train engineers who will specialize in surveying underground resources. These engineers do not use surveying technique to formulate geological deductions from the rocks protruding from the earth's surface. Their task is to use physics to ascertain the physical characteristics of underground rocks, and to utilize their geological knowledge to estimate

the stratigraphical structure, mineral deposits and the form and size of the minerals.

After studying the scientific laws of rock structure chronology, the stratigraphical timescale, the stratigraphical structure which the minerals form, and the origin of the mineral deposit, the geologist can generally deduct whether or not there are mineral deposits near the earth's surface. But this type of geological deduction primarily depends on things directly visible. However, in some places, like the desert area, the alluvial plane, etc, the rock layers are all covered by the loose sand and regolith, with no rocks protruding. Under such conditions, geologists would be at a loss. At the same time geological conditions are endlessly changing. Sometimes we cannot make an accurate deduction or reach a definite conclusion simply by surface observation. This is especially so when prospecting for petroleum and natural gas resources hidden several hundred to several thousand feet underground. Then the geophysical survey method must be adopted.

Geophysical surveying means employing instruments used in physics on the ground to measure the physical characteristics of the underground rock layers -- the density, coefficient of elasticity, magnetic induction coefficient, temperature, radiation, size, hardness, and position of the rocks, etc. From these variables, the geologist can apply his geological knowledge and go through a series of theoretical analyses to determine the geological structure, whether a mineral deposit exists, and the characteristic of the mineral deposit in a given area.

Ordinarily geophysical surveying consists of the following 4 methods: (1) gravitational surveying; (2) magnetic surveying;

(3) electric surveying; and (4) seismographical surveying. In addition, rocks are also characterized by temperature change, radiation, etc. Therefore, there are other geophysical surveying methods like the temperature difference method, radiational surveying, etc.

The department of geophysics offers the following courses: those excluding politics, Russian, and physical culture -- almost 22.2% of the entire curriculum -- can be divided into 4 categories: (1) basic mathematics and physics, including advanced mathematics, physics, chemistry, theoretical mechanics and magnetic field theory, etc -- almost 30% of the entire curriculum; (2) engineering technique, including projection geometry, mechanical drafting, measurement, the surveying operation, electrical engineering and electronics, production organization, safety technics -- almost 12.5% of the entire curriculum; (3) geology, including general geology, mineralogy and crystallography, petrology, geochronical geology, tectonic geology, hydraulic geology and engineering geology, and mineral deposits -- almost 17.1% of the entire curriculum; and (4) geophysical surveying, including electric surveying, gravitational surveying, magnetic surveying, radiational surveying, drilling geophysics, etc -- almost 18.1% of the entire curriculum. This department has 2 times more basic mathematics and physics courses than the other departments. Consequently, those students wishing to enroll in this department must have a better foundation in mathematics and physics.

(5) Geophysical Surveying (2-Year Course)

Geophysical surveying is a new science which uses the most modern accomplishments of present day physics to investigate underground resources. This new science is closely integrated with

national economic construction. Due to the urgent need for experts in this field, we must train more qualified technicians to master this new science in our 2-year course.

Generally speaking there are 4 kinds of geophysical surveying: (1) gravitational surveying; (2) magnetic surveying; (3) electric surveying; and (4) seismographical surveying. Of course all these surveying methods are carried out with precision instruments. These methods can determine if underground deposits exist, and can estimate the forms and size of the mineral ore. At the same time geophysical surveying can also be used to find out the underground rock layer construction and the problems related to underground water to help solve the work planning problems involved in fundamental construction.

Judging from the nature of these methods, an excellent foundation in mathematics and physics is necessary to master this science because physical problems are the primary ones to be dealt with in the future. But geophysical surveying and geological surveying are mutually related; therefore, those who study geophysical surveying must at the same time study some geological sciences.

(6) Hydrogeology and Engineering Geology

Hydrogeology and engineering geology are sciences devoted to the study of underground water and various geological problems related to engineering. They utilize geological knowledge for various kinds of engineering. These new sciences developed during the great socialist and communist construction of the Soviet Union, and in turn, have been used for further socialist and communist construction.

The hydrogeological and engineering geological engineers this department trains should be able to carry on research on underground water, solve problems related to water supply, drainage, and geological problems related to hydromechanical engineering, hydraulic engineering, and architectural engineering.

Students majoring in this department should take various kinds of geological courses, like general geology, crystallography and mineralogy, petrology, geomorphology and quaternary geology, tectonic geology and various geological engineering courses like electrical and mechanical engineering and engineering mechanics. From this basis they should take additional courses in hydrogeology and engineering geology.

This department has also established a 2-year course to train more qualified technicians.

(7) Mine Surveying Technique and Quarrying

Quarrying is heavy mountain work necessary for exploring and mining mineral resources, especially metal resources. Quarrying together with drilling surveying, physical surveying and geochemical surveying can help discover and expand the national industrial material base; thus it can guarantee that socialist industry will be constructed economically.

This department aims to train more qualified technicians capable of mastering the mine surveying technique. In mine surveying they are primarily responsible for carrying out surveying projects and supplying geological data, so that the amount of mineral deposits can be calculated, their type noted, and their worth determined.

This department offers the following special courses in addition to the general basic courses: tectonic geology and strata sketches, the organization and planning of quarrying, hydrogeology and engineering geology, general geology, mineralogy, petrology, topographical surveying and mineral deposit surveying, mining method, ventilation and drainage, useful minerals and methods of surveying for them, excavation engineering, mining mechanics, etc.

II. Mining and Management

(1) Mine Surveying

Mine surveying is like the eye for mine work. Its chief task is to constantly and timely survey and draw the mine alleys in order to solve the geometrical problems encountered in construction and mining in the mining industry, and to constantly examine the accuracy of alley progress; to study the geometrical layout of mineral deposits and their spatial distribution in order to formulate concrete methods to protect underground resources, to calculate and analyze changes in the amount of mineral deposit, to study the process of rock movement in the open area and to participate in designing mining work. While China is building and expanding many mines for industrial construction, many brand new surveying technical cadres are especially needed for the accurate designing of the construction of mines and the mining of minerals.

This department exists to train mine surveying engineers who will have mastered geological mining and who will be able to do mine surveying for China. The graduates will be put in charge of surveying assignments in mine plants or in geological surveying departments.

The main courses of this department are geology, general surveying, principles of error and the least square, mineral deposit geometry, advanced surveying and practical astronomy, surveying instruments and tools, mining methods, etc. Most of this department's courses presume that the student has a foundation in higher mathematics. Consequently, those who desire to major in mine surveying must have an excellent foundation in mathematics and enjoy good health.

(2) Mining

China has already entered the economic construction period of socialist industrialization. Since the development of heavy industry decisively influences socialist industrialization, the mining industry is a pioneering industry, one important for the development of China's heavy industry. To mine China's rich coal, iron and various nonferrous metal resources we must prospect many new mines, build many new mine plants and raise the present level of mine production; therefore we must train more technical cadres for mining engineering in order to meet China's mining construction needs.

The mining department exists to train for China mining engineers who have mastered mining methods and can organize and supervise mine production. After graduation they are assigned to mine plants or industrial planning departments. They will accurately design the mine prospecting system and mining methods from the geological conditions of the mine and mechanical needs. They will also organize and supervise production in the entire mine in order to constantly increase the rate of production and to guarantee work safety and the economical use of China's underground resources.

This department's main courses are geology, prospecting, mining methods, ventilation and safety, mine mechanics, economical organization and designing for the mining industry.

This department has 3 special courses: (1) Coal mining; (2) Ferrous and nonferrous metal mining; (3) Open-pit mining of useful minerals.

(3) Mining (Short course)

This short course exists to train higher technicians who can organize and supervise coal mine production. They are the central figures of the production technical work of the whole mine under the engineer's supervision. They must be able to work independently in the partial production unit; organize and supervise workers to promote production; and direct technical works. In this 2-year course they must learn to understand the coal mine geology, the mine's mechanical engineering facilities, mine prospecting, mine surveying, the organization of production, mine ventilation, safety technique, etc. They must also understand and master various advanced mining methods and the mechanical facilities of the whole mine's production process like the pneumatic drill, the electric drill, the coal cutter, the combine coal mining machine, and all sorts of transportation machines. The main courses in this short-course are coal mine geology and surveying, the general theory of the mine industry, mining and the support of wells, mining machines, and coal mining methods, etc.

(4) Drilling for Petroleum and Natural Gas

Petroleum like coal and electricity is a power source for all industries. Without it national industrialization cannot be

achieved. Petroleum is hidden several hundred feet or even several thousand feet underground. When geologists, through scientific surveying discover a petroleum deposit or an area where a petroleum deposit may exist, they first apply scientific techniques to open a way for the oil to come out by drilling a well to mine the deposit or merely to discover if it merits mining. The well driller has the glorious task of mining the rich petroleum resources. He is the vanguard of the petroleum industry.

At present we generally use the new type rotating drill. It drills through a drill bar several hundred feet to several thousand feet long with the drill bit reaching the bottom of the well. This drill bar weighing about several dozens of tons and rotating in the high speed of the machine axis produces a force strong enough to make the drill bit crush the hard rock at the bottom of the well. This drill bar works rapidly, is good and economical and causes no accidents. Drilling is just such a brand new modern scientific technique. With the development of the petroleum industry, in our drilling project, we must adopt, step by step, the most modern Soviet techniques like turbine drilling, electric drilling, etc. The operating technique should also be gradually automatized. To meet the demands of national construction many higher technical experts capable of mastering these most advanced scientific techniques are needed.

This department trains engineers capable of mastering the scientific theory and technique of drilling. After 4 year's training in college, the engineers should be able to master all designing at the drilling site, all the technical designing this involves, and various types of operating measures and operating techniques. They should also have thoroughly learned how to select from the various kinds of drilling facilities, how to apply them most efficiently,

how to maintain and protect them, and how to drill safely. They should be able to analyze and judge drilling accidents, to propose measures to deal with them, to drill accurately and clearly guarantee the quality of the drilling and to raise drilling efficiency as well as to cut down the cost.

To meet these training demands, the students in addition to advanced mathematics, physics, chemistry, geology and other fundamental courses, should also study mechanics, mechanical and petroleum geology, plastic chemistry, etc. They should also take courses in rock-crushing mechanics, geological engineering, geological drilling, petroleum mining, drilling machines and their automation, the fundamentals of mining operation, economical organization and planning, etc.

(5) Petroleum and Natural Gas

The department of petroleum and natural gas devotes itself to studying the application of modern scientific theory, the most modern tool equipment, advanced operating techniques, and efficient labor organization for the rapid and economical mining of sufficient amounts of the natural resources, petroleum and natural gas which are hidden deep underground.

This department trains petroleum and natural gas engineers who, after 4 years of study, are requested to achieve the following: (1) The ability to master the fundamental theory and actual operating techniques involved in oil and gas production in the field; ability to analyze the concrete problems encountered in the production process and to propose technical measures;

(2) The ability to understand the basic theory and operating conditions of oil and gas well equipment, the repair and the

artificial method for increasing production; ability to adapt designing and organizational operations to concrete conditions;

(3) A complete knowledge of the mechanical equipment used in petroleum and gas drilling; the ability to accurately select, apply, maintain, and protect this equipment.

(4) A general knowledge of petroleum and gas storage, management and conveying, the ability in cooperation with the mechanical engineer and the storage and conveying engineer of the mining plant to fully design and organize oil dressing, storage, conveying, and gas conveying operations.

(5) A general knowledge of geology and drilling, the ability in cooperation with the geological engineer and the drilling engineer to do all the designing and planning involved in mining the oil field and the ability to administer partial operations.

After graduation, the engineers in this field can join in the following concrete tasks: (1) the technical operation of the workshop of the oil plants and gas plants in the mining field; (2) the designing and planning on the various levels of the production technique management organizations; (3) specific research projects on oil and gas drilling in the scientific technique research institutes.

The technical courses of this department are the following: stratigraphical physics, oil drilling engineering, gas drilling engineering, designing of oil and gas drilling, and preparation for the storage of oil and gas. The fundamental courses in this field are: geology, mechanics, mechanical theory and mechanical parts, physical chemistry, subterranean hydraulics, oil geology, etc. All

these courses aim to train the students in thermodynamics, mechanical and electrical engineering, and the scientific foundation of mathematics, physics, and chemistry.

(6) Storing and Conveying Petroleum and Natural Gas

This department trains petroleum storage and conveying engineers who through their studies should obtain general training in mechanical engineering, should master some civil engineering, should reach a definite standard in their knowledge of oil technique, and should become capable of understanding the problems involved in the storage and conveyance of oil and gas.

The petroleum storage and conveying engineers should (1) comprehend the designing, installation and operation of all types of petroleum fields;

(2) master the construction, characteristics, calculation (valuation), selection, installation, checking and repairing and conveying conditions of the petroleum storage facilities;

(3) understand the fundamental valuation, simple operation and management of long-distance oil pipe lines;

(4) understand the construction, characteristics, fundamental valuation, operation and management of the main gas storage facilities; master safety and fire prevention technique; understand the planning of organizational production and industrial economics, and should have a general knowledge of the entire petroleum industry.

Petroleum, from the mining field to the refining plant and finally to the place of use, must go through a comparatively complicated storage and conveying process in which special storage and

conveying facilities like the oil reservoir, oil pump, vehicles, ships, pipes and lines, etc, are used. Natural gas and artificial gas must be conveyed through large gas pipes to the industrial center or urban dwellers. Consequently, in the production system in the mining and refining process in the petroleum industry, storage and conveying constitute significant bridging and connecting functions. In the petroleum industry's relation to other industries, be it national defense, construction, economic construction or civilian consumption, the storage and conveying of petroleum products and gas play an even more important role. This explains why it is important for national socialist construction to train cadres concerned with petroleum and gas storage and conveying.

Petroleum storage and conveying engineers can do the following: (1) engage in the technical task of storing and conveying in the oil mining plants, refining plants or petroleum conveying and supplying bases; organize, manage and guarantee the safe operation, reasonable application, repair and installation of storage and conveying facilities in the same places.

(2) engage in building or expanding the surveying, designing and operation of various types of petroleum bases, as well as the fundamental valuation of long-distance oil pipe lines in the basic construction or planning departments.

(3) undertake technical administration in petroleum storage and conveying in the industrial management department.

(4) undertake supplying and supplementing in the military defense department.

The main courses of this department consist of the following: fundamentals of the petroleum industry, fundamentals of engineering geology, the oil pump and the compressor, valuation of commercial petroleum products, safety and fire prevention, planning economic and production organization in the petroleum industry, construction and management of petroleum bases, welding and installation of the oil reservoir and oil pipes, automatic machine and automatic oil pipe construction, applied gas conveying and storage, etc.

(7). Useful Mineral Dressing

This department trains operating engineers to manage production in the workshops of the dressing plant. It also trains those who design the dressing plant and the equipment of its workshops. This type of expert can also work in the management department of the mining industry and the educational or scientific research institutes. The dressing industry has boomed with the wide application of various types of useful minerals in industry in the last 30 years. It plays an important role in heavy industry and the fuel industry because an average of about 90% of the underground resources exist as poor deposits and many minerals can only be processed after dressing. There are 3 types of dressing methods: the so-called gravitational dressing, magnetic dressing, and flotational dressing. The most recent rapid dressing method developed by the Soviet Union, a great pioneering achievement in dressing engineering, has also been adopted in China.

Dressing engineers should have a fundamental knowledge of metallurgy; they should know the fundamental theory of organic chemistry, marginal chemistry, plastic chemistry, physical chemistry,

and hydraulics. They should also master various types of dressing, especially the theory of flotation dressing; they should have a very thorough knowledge of the techniques of crushing, sifting, dehydration, dusting, designing the dressing plant, etc.

This department offers 2 special courses: (1) coal dressing, mainly devoted to water dressing coal to raise its quality; (2) mineral dressing, mainly devoted to raising the quality of various metal minerals in order to create favorable conditions for metallurgical engineering.

This department also has a 2-year short course for training higher technicians.

(8) Mine Electromechanical Engineering

In mine industry production, the mechanization of operations, and the automation and electrification of mechanical devices are decisive in raising the rate in the production of useful minerals and in eliminating inefficient and heavy labor of the workers. In China's national socialist industrial construction, many virtuous, intelligent and healthy experts are needed to discover how best to apply and install mining mechanical and electrical facilities in the production processes in our national mining industry, and to cooperate closely with other experts concerned on the new technical basis for constructing new and reconstructing old mining industry.

This department exists to train for our fatherland engineers who understand mine electromechanical engineering, who can calculate, select, install, convey, repair, and design various kinds of electrical equipment in the mine industry. The graduates will be assigned to the technical tasks of electrical engineering in the production and designing departments of the mine industry.

The main courses of this department are the following: mining methods, principles of electrical engineering, electrical engineering, mine transformer station and the distribution of electricity, electric transmission, electric equipment for machines, mine illumination and communication, mine mechanics, etc.

Those students who want to apply for this department must be in good health and have a better foundation in mathematics, physics, and chemistry.

(9) Mine Electromechanical Engineering (Short course)

This short course was established to train higher mine electromechanical technicians. In the process of industrial production they should obtain a thorough practical knowledge of the characteristics of various types of electric machines used in mining and conveying. They should also know how to select, apply, and repair these electric mechanical facilities and be able to lead the workers to organize partial production processes, direct technical operations, and work out simple designs. The main courses of this short course include the following: the conveying machine, the mine machine, mine electrical engineering, working machine, and the installation and repair of electrical facilities. Students after graduating from this special course should become practical workers in mine electrical engineering and experts in mechanizing and automatizing our national mines.

(10) Mine Industry Construction

Mine industry construction is devoted to the fundamental construction work of the mine industry. It includes the following: construction of new mine wells, repair, reconstruction of the

production mine wells, and reconstruction of destroyed mine wells. This department was established to train for China's mine industry engineers capable of mastering the special knowledge and technical ability needed for alley excavation and civil engineering. After graduation they are assigned to designing and operating in mine wells and alleys underneath the wells in the mine plant or to the industrial designing department and to the construction of a series of ground installations in connection with the whole mine well, like the well structure and coal bunker these technical installations, as well as arrangement of buildings. In China's present day grand scale socialist economic construction the new mine construction industry is extremely important and is urgently needed.

The main courses of this department are: geology, alley excavation, mechanics and support of rocks, mining methods, principles of mine well designing, construction theory, construction, mine construction, economical organization and planning for the mine industry.

(11) Mine Industry Construction (Short course)

This short course was established to train higher technicians for fundamental construction in the mine industry. Their chief task is to plan operations independently, prepare for the operation, guide the workers in organizing production procedures, direct the technical work, present simple designing -- all under the supervision of the engineer. The main courses of this short course are: rock crushing, upright drilling, slope channel mining, pit support, etc.

(12) Mine Industry Economics and Organization

While China is pursuing grand scale socialist industrial economic construction, besides correspondingly training engineering and technical experts for all types of industry, we must also train experts for economical organization and planning in industry. For the mining industry, we must train experts for the economical organization and planning of this industry, so that they can undertake planned management and production organization for the modernized mines.

This department trains economics engineers for the mine industry. After graduation they are assigned to mine plants or industry supervision departments to decide and examine mine industry production planning, to improve production organization, to study and decide the technical quota and labor salary in the production work in order to strengthen planned management and raise the rate of labor productivity to create greater riches for the fatherland. Students of this department besides studying mining engineering technology, must also study thoroughly political economics, industrial finance, mine economics, mine industry production organization, and planning. They should also be familiar with the various policies and laws affecting the mining industry.

III. Dynamics

(1) Thermodynamics Installation

With the development of socialist industrialization, many modern joint steel and iron industries will emerge in China like the nonferrous metallurgical industry, the coal plant, the petroleum refining plant, the machine factory, the automobile factory,

the tractor factory, the chemical factory, etc. To drive the machines of these factories to produce day and night for China enough fundamental power must be supplied. Hydraulic power plants and thermo-electric plants supply this fundamental power.

The most basic equipment in the thermodynamic power plant are the boiler, turbine engine, generator, and electric equipment. The boiler moves the turbine engine with high pressure and high temperature steam. The turbine engine, in turn, moves the generator. Thus electricity is produced. This department studies thermodynamic equipment, like the boiler, the turbine engine, etc, as well as the arrangement of the entire generating station.

The heat engineers this department trains can participate in the planning, designing, installing, and conveying work and the management and scientific research projects on the thermodynamic installations of the thermodynamic power plant. The students of this department in their college studies must acquire a thorough, definite fundamental knowledge in science, technology and in matters pertaining to the thermodynamic power plant, boiler installations, turbine engine equipment, etc. In addition, they must also study Marxist-Leninist theory, so that they can raise the level of their political thinking to become the thermodynamic engineers really needed by national construction in China.

(2) Hydraulic Installation

This department was established to train hydraulic-electrical engineers. These experts, besides being familiar with the problems involved in installing and using a hydraulic power plant, must also know about hydraulic construction and a series of hydraulic-dynamics.

Therefore they must study hydraulic machinery, hydraulic building, electrical installations, the automation of the generating plant, the application of hydraulic power, the gutter way, etc.

The graduates of this department can join in the following work projects: (1) designing, installing and drafting rules governing the operation of the hydraulic power plant; (2) the mechanical, electrical and hydraulic application of the hydraulic power plant; (3) the ignition, adjustment and automation of the hydraulic power plant; (4) problems related to the small hydraulic power plant; (5) various assignments in the power transmission system management department and the electric-hydraulic power distribution station; (6) the study of the problems involved in using the various hydraulic power plants in the joint power transmission system.

(3) Generating Station, Distribution Network and Joint Power Transmission System

Socialist industrialization in China aims primarily to develop heavy industry. Electric construction is a part of heavy industrial construction because it is a power source for all industries. Cadres trained in the generating plant power transforming station and power transmission system are requested to have the fundamental ability to carry out primary designing, and to join in the fundamental construction work -- being able to apply, manage and repair the various parts of the generating plant, power transforming station and power transmission system.

In addition to the general fundamental courses, this department offers the following main courses: electrical machinery and fundamentals of electrical engineering. It also offers the following

specialized courses: the power station, electrical parts of the transforming station, the electric network, the short circuit, high voltage engineering, relay protection and system automation, and power system stability.

The field of this department is comparatively broad. It can be divided into the following 3 specialized courses in the junior and senior years.

(1) The hydraulic power station. This special course gives electrical engineers a broad knowledge in this field, makes them able to participate in the designing, installation and utilization of the electrical parts of the hydraulic power station and makes them capable of conducting research on these parts.

(2) The thermodynamic power station. This special course gives electrical engineers a broad knowledge in this field, makes them able to participate in the designing, installation and utilization of the electrical parts of the thermodynamic power station and makes them capable of conducting scientific research projects on these parts.

(3) The distribution network and joint transmission system. The task of this special course is to guarantee that during any type of weather, the distribution network can function without fail and transmit electricity to the consumers without interruption. The electrical engineers trained by this department can participate in the designing, construction structure and utilization of the distribution network and the joint transmission system and can participate in scientific research projects on them.

(4) The automation power station, distribution network and joint transmission system and protection of relays. The electrical engineers trained by this department can participate in the automation installation of the power station, distribution network and joint transmission system and in the designing, installation, adjustment and utilization of relay protection and can participate in scientific research projects on the list.

(5) High voltage insulation and overvoltage protection. Electrical engineers trained by this department can undertake the following tasks in the laboratories of the joint transmission system and scientific research organizations: (1) to experiment and formulate methods for protection against overvoltage in the joint transmission system, (2) to study the functions of insulation, improve present overvoltage protection instruments and to study the application of insulation to various electrical installations.

Each special course offers 2 or 3 specialized courses in addition.

(4) Power Station, Distribution Network and Joint Transmission System

This department trains higher electrical technicians to take charge of the transmission, maintenance, repair and management of the electrical part of the power station, the distribution network and their joint system. These technicians should at the same time be able to do the partial designing and installation of the electrical part of the power station and the distribution network.

During China's national industrialization along socialist lines, the development of electrical enterprises is an important

link to guarantee a continuous increase in industrial production. Majors in this department are very important for fulfilling the need for experts in the rapid development of electrical enterprises and the early participation in construction in China.

Students majoring in this department must study the following general technical courses: fundamentals of electrical engineering, electromechanics, industrial electronics, the electric part of the power station and the transforming station, high voltage engineering for power transmission and distribution, relay protection and automation, thermodynamics, and the fire power part of the power station, hydraulics and the hydraulic part of the power station, organization and planning of dynamics, safety and fire control techniques, etc.

(5) Industry Electrification

During China's national industrialization along socialist lines, we must build and expand many modern factories. Their productive machines are primarily driven by electric engines and controlled by electrical tools. Electrical automation is widely employed by these industries to guarantee systematic production, and an improvement in labor productivity. This department trains students to do research on the concrete utilization of electricity in all industrial productions.

Students majoring in this department will learn the fundamental theory of and gain special knowledge on the different electrical installations in industry. They will likewise possess the practical technique for designing, installing, adjusting, operating, and repairing these installations.

This department offers the following main courses: principles of electrical engineering, electrical engineering materials, principles of electromechanics, electrical tools, industrial electronics, adjustment theory, principles of electrical movement, the automatic control of electrical movement, special problems of electrical movement, electrical installations of productive machines, electrical thermos and electrical welding, and electrical supply in industry.

(6) Industry Electrification (Short course)

This short course trains higher technicians in the industrial electrification which China urgently needs in her grand scale economic construction. (For the meaning of industrial electrification please refer to the "Guide to Industrial Electrification Department.") They are to undertake the transportation, repair, and installation of electrical equipment in the factories, the production organizations and management of the electrical department; they are to assist with electrically operated equipment and illumination in the industries as well as with the designing of power supply systems.

This department offers the following main courses: principles of and measurements in electrical engineering, materials for electrical engineering and high voltage engineering, principles of electrical operation, industrial electronics, industrial electricity supply and illumination, control of electrical tools and electrical operation, electrical equipment of the productive machinery, maintenance and repair of electrical equipment.

(7) Installation of the Main Engines of the Ship

This department aims to train mechanical engineers in ship dynamic power installation. Their chief task after graduation is

to undertake the management of ship engines. They must be (1) healthy: have the alert and decisive fine qualities of seamen; they must have initiative and be creative; they must be good at organizational, analytical, and independent work; (2) have a foundation in the scientific theories governing the practical work of the ocean ship chief engineer; they must be capable of independent research and have actual experience in operating the engines of ocean-going ships like the utilization, maintenance, and repair, as well as emergency repair, on ocean trips of the main engines, auxiliary engines and electrical equipment of the ship so the ship machinery may function normally during ocean trips.

As China's national industrialization along socialist lines proceeds, the role of ship transportation increases correspondingly. Thus those who manage ship engines contribute significantly when they discover an engine's potential, when they improve technical operations, further the economical use of fuel, extend the life of equipment and guarantee the accomplishment of plans for transportation.

In addition to the fundamental courses, the main courses of this department are: geometry drawing, mechanical drafting, theoretical mechanics, material mechanics, principles of machinery, electrical engineering, metal engineering, metallography, etc. The main special courses are: the ship boiler, the ship steam engine, the steam engine, the internal combustion engine for ships, ship auxiliary organs and auxiliary systems, the experiment and technical management of the ship dynamic installation, ship structure and construction fundamentals, the ship propeller, electrical equipment of the ship, and ship repairing and organization, etc.

Those who are near-sighted, color-blind, flat-footed and cardiac do not qualify for this department.

IV. Metallurgy

(1) Iron and Steel Metallurgy

The development of heavy industry is the first step in realizing national industrialization along socialist lines. The development of the iron and steel industry is specially important for this because the development and growth of the iron and steel industry means the growth of all industry and the entire people's economy of China. Comrade Stalin once said: "The iron and steel industry is the basis of our industrial bases." Without a highly developed and strong iron and steel industry, it would be impossible to really develop and consolidate the fuel industry, light industry, transportation, and agriculture.

In China's first five-year plan, huge mechanical factories, tractor factories, automobile factories, refinery and generating stations are to be built. Tens of thousands of tons of steel and iron are needed to construct these factories. Therefore, iron and steel metallurgists have a glorious task.

This department aims to train metallurgical engineers who can master modern iron and steel production technology and the designing of iron and steel factories.

In the senior years, this department is further divided into 3 special fields: iron metallurgy, steel metallurgy, and electrical metallurgy.

Iron metallurgy: the engineer in this specialty must master modern (high) furnace production technology, and the designing of the high furnace workshop. At the same time, he must also be able to further improve the quality of the iron ore and raise the production goals of the high furnace.

Steel metallurgy: the engineer in this specialty must master the Martin furnace, and Bessemer furnace refining methods and must be able to design the Martin furnace and Bessemer furnace workshops.

Electrical metallurgy: the engineer in this specialty must be able to refine various kinds of special steels and design electrical furnace workshops.

The metallurgical engineers trained by this department, besides being able to master the production technique and workshop designing of iron refining, steel refining or electrical furnace steel refining, can also participate in scientific research projects and teaching in this specialty. At the same time, they can also participate in the leading organizations of the iron and steel industry.

Special courses for this department are: principles of metallurgy, the metallurgical furnace, crystallography and mineralogy, metallography and heat treatment, the metal hardening process, the foundry, steel refining, electro-metallurgy, safety techniques and economics, (industrial) organization and planning of industrial metallurgy.

(2) Nonferrous Metallurgy

Nonferrous metallurgy refers to all metals except iron, manganese, and chromium. Nonferrous metallurgy studies the scientific

technology needed to refine qualified metal products most effectively from various kinds of mineral materials.

In China's grand scale economic construction, the nonferrous metallurgical industry constitutes an important link in heavy industry. It forms the basis of all industries. Without nonferrous metals (copper, nickle, lead, tin, zinc, cadmium, antimony, mercury, aluminium, magnesium, tungsten, molybdenum, etc) the iron and steel industry, the electrical appliance industry, the defense industry, the aviation industry, the machinery industry, the transportation industry, and the chemical industry would be without a material basis. Thus it would be impossible to carry out large scale economic construction. Therefore, the nonferrous metallurgy department undertakes the great task of training many nonferrous metallurgical engineering cadres for China.

Due to the numerous kinds of nonferrous metals, the nonferrous metallurgy department has several special courses: (copper, aluminum, lead, zinc, tungsten, molybdenum, and oxidole-aluminum). The aim of the nonferrous metallurgy department is to train metallurgical engineers who can master modern scientific technology in the metallurgy of various nonferrous metals and who thoroughly understand and have the ability to do research on the metallurgy of one or several nonferrous metals. The course of study in this department lasts 4 years. The graduates can undertake industrial production, the planning of technical management, scientific research projects in various nonferrous metals factories, and work in the management departments of the nonferrous metals industry and in scientific research organizations.

The special courses of this department are: the theory of metallurgy, the metallurgical furnace, metallography, metal engineering, the metallurgy of heavy metals (copper, nickle, lead, tin, zinc, and cadmium), the metallurgy of light metals (aluminum, magnesium, and beryllium), the metallurgy of special metals (antimony, mercury, tungsten and molybdenum), and the metallurgy of precious metals (gold, silver). Automatic control and automation of metallurgical processes: dusting and washing of gas, water supply and blast, lifting and transportation, and workshop facilities.

(3) Iron and Steel Processing (Mechanical Treatment Process)

Iron and steel process engineering is a very important link in the production process of the metallurgical industry. The task of iron and steel metallurgical engineers is finished after they have extracted iron and blasted iron and steel ingots from iron ores. But steel ingots cannot be used directly in industry. They must be made into finished or semifinished products for industrial use through mechanical treatment. For instance the steel ribs used in cement construction, steel girders, various types of steel for bridges, seamless steel tubes for the oil industry, sheet steel for ship building, steel rails for railroads, and the wheels of locomotives and trains are all made from steel ingots through mechanical treatment. If the iron and steel processing industry does not keep up with production it will be impossible to manufacture all the iron and steel materials needed by other industries. Thus it would not be possible to truly strengthen and fully develop these industries.

This department trains metallurgical engineers to master the production technique used in modern iron and steel processing and the designing of workshops in the iron and steel processing factories.

In the senior years this department is further divided into 2 special courses: (1) Steel molding -- molding the metal by rolling or extension.

(2) Forging -- producing large mechanical parts by forging.

The special courses of this department are general metallurgy and the metallurgical furnace. Auxiliary courses are metallography, the heat treatment of metals, metal cutting and welding, corrosion and protection, the foundry, and general civil engineering. Other special courses are: principles of metal processing, metal processing technique, steel molding, forging safety technique, industrial economy of metallurgy and planning of industrial organization.

(4) Processing Nonferrous Metals

The nonferrous metals industry occupies an important position in the people's economy, exercises important functions in the large scale economic construction and gradual realization of socialist in China. It is especially important for strengthening our defense.

Nonferrous metal processing is an important part of the nonferrous metals industry. This industry casts the nonferrous metals into ingots and alloy ingots through the cupola processes, then molds the ingots with machines into various nonferrous metal materials. For instance copper wires made from refined copper through drawing processing is an important material for electric transmission. When aluminum and magnesium alloy are processed they become materials important for aircraft manufacturing.

The nonferrous metal processing department was established to train engineers to produce nonferrous metal material and to construct

a nonferrous metal processing industry for China's industrialization. They can pursue the scientific studies of factory production as well as teaching.

The special courses of this department are: nonferrous metal processing, principles of processing, equipment and designing of processing factories, the metallurgical furnace, crystallography, metallography and heat treatment, foundry engineering, principles of metallurgy, general metallurgy, metal cutting and welding, general principles of construction, organization of the industrial economy and technical safety, etc.

(5) Metallography and Heat Treatment of Metals and Alloys

Metallography is a science that studies the characteristics, composition, and construction of metals and alloys and their relations to each other. Heat treatment aims to improve and raise the internal organization and characteristics of metals and alloys by heating or freezing them to make them meet the demands of industries.

Nonferrous metals and their alloys (like aluminum alloy, copper alloy, friction-enduring alloy, mineral alloy, etc) are important for the aviation industry, the defense industry, the machine-building industry, and the electrical industry. The research, manufacture, processing and treatment of these metals and alloys are important for industrializing China along socialist lines. The task of the metallography and heat treatment department is to train many technical cadres to shoulder these tasks.

This department aims to train metallurgical engineers who will be able to utilize their knowledge of metallographical heat treatment to study, treat, and improve the characteristics of nonferrous metals and their alloys. This department's program is

4 years long. Its graduates should be able to pursue industrial production and scientific research work in the metallurgical, extension processing, and mechanical manufacturing factories.

In addition to general engineering courses, the chief basic courses this department offers are: general metallurgy, metallography, the metallurgical furnace, metal processing, X-ray, and the foundry. Its main special courses are: principles of metallography and heat treatment, the physics of metals, powder metallurgy, heat treatment, and the designing and equipping of the workshop.

(6) Metallography and Heat Treatment

Metallography and heat treatment form a necessary part in the iron and steel industry, the machine building industry, and the defense industry. It is a technical engineering procedure that enables iron, steel and their alloys to acquire new characteristics. Heat treatment makes it possible for steel gun-barrels to suffer no damage after more than a thousand shots have been fired from them and makes steel springs in train seats long endure tear and wear. For the manufacture of airplane bodies, light metals like aluminum or magnesium are needed; but fairly high strength is also needed. To meet the required characteristics and strength, these metals must be heat treated.

Moreover in metal materials undergoing mechanical treatment (e.g., forging, pressing, rolling and drawing) more often than not a very strong internal reaction occurs that stops the mechanical molding treatment. In such cases heat treatment must be added to mechanical treatment. This means that heat treatment besides giving molded products the good characteristics they need, is also a necessary step in certain mechanical manufacturing processes.

An improvement in the characteristics of metal materials is inseparably linked with changes in their internal crystal composition and structure. Metallography uses the outward appearance of metals to determine the internal structure of the metals.

Metallurgical engineers trained by this department can use the metallographical microscope and X-ray machines to observe the internal structure of metals and use heat treatment to improve their internal structure to give them the necessary physical characteristics. These engineers can also design equipment for heat treatment workshops.

In this department, the Russian political courses, fundamental courses, electrical engineering courses and mechanical courses are the same as those given by iron and steel metallurgy. The fundamental courses in this department are: general metallurgy, the blast furnace, and metallography. Auxiliary courses are: metal processing, the foundry, metal cutting and welding, metal corrosion and protection, and general principles of civil engineering. Special courses are: the X-ray, principles of metal heat treatment, the physics of metals, metallography (dealing principally with alloy heat treatment, and the equipment for and designing of the heat treatment workshops), safety technique, economics of the metallurgical industry and planning industrial organization, etc.

V. Machine and Tool Manufacture

(1) Boiler Manufacture

The boiler is very widely used. It is one of the 3 major pieces of equipment of the fuel power plant. The boiler is also used in the transportation system of various industries and factories to supply the heat needed for production.

Students of this department should first have a solid foundation in the general basic technical courses such as designing, theoretical dynamics, mechanics of material, principles of mechanics, mechanical parts, etc; then they should delve deeply into thermodynamics, heat transmission, electrical engineering, metallography and heat treatment, etc. They should also take special courses in boiler designing, manufacturing and application. Courses on designing and manufacture are: the fuel boiler and steam boiler, boiler manufacturing and installation, fundamentals of the boiler, auxiliary equipment for the boiler, etc. Practical courses are: automation of the boiler, the heat measuring instruments, the thermoelectric station, safety and fire prevention, etc.

This department was established to train boiler designing and manufacturing engineers. After graduation they can undertake boiler manufacturing, designing or research projects in the boiler manufacturing factory, the design division of the boiler industry, or in scientific research organizations.

(2) Turbine Machine Manufacture

The special aim of this department is to train turbine machine design and testing engineers. The graduates of this department can pursue designing, research, and testing projects in turbine designing departments, turbine manufacturing factories, and scientific research organizations. The turbine is a big thermodynamic machine with wide application: thermodynamic stations, fuel power plants, big ships, big rotating mine industry, motor and other large fixed dynamic installations are all operated by turbines.

The scope of the fundamental courses of this department are comparatively wider. In addition to general courses like mechanism,

mechanics of materials, mechanical principles and parts, students must also master certain theoretical knowledge in elastic dynamics, gas dynamics, mechanical vibration, thermodynamics, heat transmission, etc. Moreover, students must also know about the metal engineering, metallography and heat treatment, differential and technical measurements, etc necessary for manufacturing.

Special courses of this department are: the turbine, the steam turbine, turbine adjustment, turbine manufacturing, the refrigerator, the heat exchange installation, thermodynamic stations, etc. After completing these courses, students will thoroughly understand the turbine and all its auxiliary equipment; they will also be able to design both the turbine and all the equipment used with it.

(3) The Internal Combustion Engine

The special aim of this department is to train engineers who can design internal combustion engines. After graduation the students can undertake the design, manufacture and research projects in the internal combustion engine design sections or internal combustion factories. The internal combustion engine is very widely used. For instance the automobile and tractor are both operated by it. So too are some ships and fixed dynamic installations.

Students of this department should first obtain a solid foundation in such basic technical courses as design, mechanism, mechanics of materials, mechanical theories, mechanical parts, etc. With such a foundation they should delve more deeply and study the theoretical principles of thermodynamics, heat engineering, and the principles of the internal combustion engine. At the same

time they must also acquire a thorough knowledge of the metal engineering, metallography and heat treatment, and differential technical measurement, etc needed for manufacturing.

Special courses of this department are: the structure of and calculations pertaining to the internal combustion engine, the steam turbine, the oil supply system, and the adjustment of the internal combustion engine. This department is further divided into 2 special courses: the automobile and tractor engine, and the fixed and ship internal combustion engine.

(4) Steam Locomotive Manufacture

The special aim of this department is to train steam locomotive manufacture design engineers. After graduation, students can work in the design or research divisions of the steam locomotive factory or undertake the installation and equipment work of the steam locomotive. While studying students must master courses on the theory, construction and design of the locomotive: locomotive dynamics, the gas turbine and the steam turbine, the cork generating engine, traction calculus, the brake, etc. In addition they must also take production training, locomotive repairing, locomotive conveying, locomotive manufacturing, etc.

(5) The Ship Steam Engine and its Equipment

Ship building is important in China's economic construction. It shoulders the important task of strengthening defense and developing marine transportation. The ship is a marine transportation instrument, the most powerful and cheapest of its kind. Therefore it has great significance in economic construction.

The structure of a ship can be divided into the ship body and machinery. The ship steam engine is an important part of ship machinery. The course on the ship steam engine and its installation is a course which treats the science of construction principles, the calculation, design, and manufacture of the steam engine as it is found in modern ships.

This department was established to train for China ship steam engine design and manufacturing mechanical engineers to undertake the production work involved in ship building in order to provide the ship building experts needed for industrializing China along socialist lines.

Besides the basic engineering courses: e.g., theoretical mechanics, the mechanics of materials, mechanical principles, mechanical drafting, the special courses of this department are thermodynamics, the principles of the internal combustion engine, the construction and calculation of ship internal combustion engine, the internal combustion engine of the ship and the design and manufacture of its installation, ship principle and equipment, and field training and factory visit.

(6) The Internal Combustion Engine for Steamships and its Installation

Ship building is important for the construction of China. It has the function of strengthening our national defense and developing our water transportation. Ships are used to transport goods across waterways. Then, too, ship transportation is relatively cheap. Yet the ship has the greatest carrying capacity. Thus it is very important in economic construction in China.

The construction of a ship can be considered from 2 angles: the construction of the hull and the construction of the machines. The internal combustion engine is one of the important elements in ship construction. To work with the modern internal combustion engine and to become able to install it one must study the principles of installing it, making it, making calculations for it and planning it.

People study the installation of this engine so that we may obtain engineers who can install and design such engines for China. They also study it so they may take up ship building in such industries. Thus will the demand for abilities in the industrialization of the country under socialism be met.

The basic courses in this department are: theoretical mechanics; mechanics of materials; principles of machines; and making diagrams of machines and designing and making models of machines. In addition there are also courses in thermodynamics, principles of internal combustion machines, the planning and building of the internal combustion engine, methods of installing such an engine, and also the principles of shipping or equipping these machines. In addition to these courses there will be laboratory work in the school and factory practice.

(7) Machinery-Building Engineering

This department aims to train mechanical manufacturing engineers in machine building. Their task is to study how to make castings into machines by forging, processing and cutting, to plan the most economical processing procedure, to select the most suitable work machine, to design the most efficient workshop and to undertake

complex manufacturing projects. While China is building many factories, this department is very important.

Machine-building engineering is very essential. Experts in this field should be able to use the blueprint for carrying out the plan; they should be able to select the proper processing method, equipment, and tools; to ascertain the technical quota (machine, material, time, and manpower); to design forceps if necessary; to design a simple machine bed, and knife; to design the processing workshop (mechanical processing workshop, tool workshop, equipment workshop, repairing workshop); and to organize workshop production, the installation and maintenance of general machinery.

Engineers trained by the machine-building department should work in the machine-building department (in the automobile, tractor, or machine tool factory, in the armory factory and other machine factories), the industrial department, at designing boards (production designing, factory designing) and in scientific research organizations.

Courses to be studied at this department are: machine-building engineering, the measurement of differential technique, principles of metal cutting and knives, principles of forceps design, principles of designing the machine-building factory, the metal cutting machine, foundry engineering, smelting engineering, welding engineering, crushing engineering, etc. These courses center on machine-building engineering, which integrates the contents of the second, third, and fourth of the above-mentioned courses and applies them in designing so that concrete production problems can be solved from the existing production chart and production data. The aim of the course "principles of designing the machine-building factory" is to design the

machine tool workshop, the tool workshop, and the repair shop in order to meet manufacturing needs. It is also meant to provide a general knowledge of plane drawing, the foundry, smelting, heat treatment, and welding workshop design.

(8) The Metal Cutting Machine and its Tools

The metal cutting machine is used for building all kinds of machines. Therefore it is called a tool machine. There are various types of metal cutting machines. The general ones are: the lathe, the milling machine, the planing machine, the drilling machine, the grinding machine, etc. The metal cutting tools are the lathe, planer, mill, drill, etc.

In the wake of rapid industrial development, the production of various kinds of highly efficient, precise and durable machines are more urgently needed, so that the production rate can be constantly improved and raised. Consequently, the improvement of metal cutting machines, the design and manufacture of new machines, the improvement of metal cutting tools and the creation of new cutting tools play a decisive role in the development of machine building and in improving production speed.

Engineers trained by this department are chiefly concerned with designing the metal cutting machine and metal cutting tools. They can undertake projects on the design of the metal cutting machine and metal cutting tool in the industrial departments or factories, scientific research and experimental work on metal cutting machines and metal cutting tools in the scientific research organizations, or the production or installation of the metal cutting machine and metal cutting tools in factories.

Students in this department should take a series of theoretical courses on machine and tool design, e.g., principles of machinery, mechanical parts, principles of metal cutting, the metal cutting machine, the metal cutting tool, the electrical equipment of machines, machine manufacturing technique, etc.

(9) Foundry Engineering and its Tools

Foundry engineering, the first step in machine building, is very important. About 60 to 80% of machine castings come from foundry factories. Besides, they constitute an important part of the machine. Since the quality of the entire machine is directly responsible for the quality of the product, our present task is to produce strong, durable and suitable castings to meet China's needs for large scale economic construction. Because of the growing development of foundry engineering, all the operations tend to be mechanized and automatized. Likewise, its function in construction grows daily.

This department aims to train mechanical engineers to work as foundry engineers -- engineers who are richly versed in the fundamental knowledge of this field; can design foundry workshop machines and plan the arrangement of equipment; formulate foundry production procedure and control the quality of the foundries; who are familiar with the characteristics of the metal materials and the theories on how they melt, and can master the economical calculation of the foundry workshop and safety, fire prevention technique. Therefore the students should complete the following courses sometime in their program of studies: (1) Fundamental courses: politics, advanced mathematics, athletics, Russian, chemistry, physics; (2) Fundamental technical courses: mechanical drafting, metal engineering,

electrical engineering, theoretical dynamics, mechanics of materials, hydraulics and hydraulic mechanics, mechanical theory, thermodynamics, mechanical parts, hoisting transport machinery, metallography and heat treatment, differential and technical measurement; (3) Special courses: principles of metallurgy, technical analysis, foundry engineering, foundry workshop equipment, the foundry boiler and the dry boiler, mechanical manufacturing engineering, principles of foundry workshop design, industrial organization and planning, safety and fire preventing technique. There are also courses in planning, production field work, and thesis planning to integrate all the courses studied.

(10) Metal Processing and its Machinery

Metal processing is extremely important in the mechanical manufacturing engineering of heavy industry, e.g., about 70% of automobile or tractor parts are produced by smelting and processing. Then, too, most of the parts used in the defense industry, in aviation manufacture, and in the electronic and electric manufacturing industries are made through smelting and processing.

The special characteristics of processing in production are enterprise, speed, low cost, and the precision with which they meet needs.

Because in old China speed, efficiency in production, and production cost were neglected, this type of work was formerly without foundation. But in the socialist countries economy of manpower and materials is specially emphasized. In the USSR processing manufacture is well developed and far more advanced than in any capitalist country. China, after liberation, following the Soviet Union's

advanced experience, created such a metal processing department in our institutions of higher learning. This was unheard of in China's history.

Following the execution of the First Five-Year construction plan with regard to industrial production, mechanization of smelting and automation in pressing are urgently needed to promote production efficiency. The reactionary government had never trained such experts. For the 141 large scale industries it is hoped that the industrial schools will train many processing engineers to join in China's great and glorious socialist construction work.

This department aims to train mechanical engineers. Besides knowing basic scientific and engineering theory, they must also be able to (1) formulate heat smelting and cold pressing working method and procedure, (2) design the mold and tools for heat smelting and cold pressing, (3) design the mechanical equipment for heat smelting and cold pressing, (4) design new factories and workshops for heat smelting and cold pressing, (5) formulate the economic organization and production planning of the factory, (6) do scientific research.

To train engineers to meet the above requirements, students must study the following courses in the 4-year period.

Fundamental courses: political science, advanced mathematics, athletics, Russian, chemistry, physics; fundamental technical courses: mechanical drafting, metal engineering, theoretical dynamics, electrical engineering, mechanics of materials, hydraulics and fluid mechanics, principles of mechanics, thermoengineering, mechanical parts, lifting transport machinery, metallography and heat treatment, differential and technical measurement, mechanical manufacture engineering, industrial organization and planning,

safety and fire prevention technique; special courses: principles of metal processing, moldless smelting, mold smelting and mold manufacture, cold pressing, equipment of the metal processing workshop, the metal processing factory and the design of its workshops.

Besides studying theoretical courses, students must also take courses in planning, the production laboratory and thesis planning so that theoretical knowledge can be strengthened and integrated with concrete experience to prepare them for independent work after graduation.

(11) Metallography, Heat Treatment and the Workshop Equipment Needed for Them

This department occupies an important position in modern machine building. Formerly most of the tasks of the machine factory were concerned with repairing. Very few factories could produce a whole set of machinery, therefore it was difficult to see their importance. But at present machine factories all over the country have resumed production, and, due to the proper distribution of labor to meet our national construction needs they are separately engaged in the manufacture of various special kinds of machinery. Furthermore, when the Five-Year Plan is completed more bigger machine-building factories will join production. To mass produce various pieces of complicated, precise, efficient, durable machinery, many mechanical parts must undergo various kinds of heat treatment before and after processing. Consequently, we must train many heat treatment engineers who can understand the structure and characteristics of metals and how they are tested, master the principle of heat treatment and the fundamental techniques of workshop equipment design so that they can specialize in machine building and help to

improve technique, raise the quality of the product, and undertake scientific research.

Besides political science, fundamental courses, and fundamental technical courses, which resemble those of other mechanical departments, this department's major courses are physics and chemistry, technical analysis, black metallurgy, principles of metallurgy, metallography, heat treatment of metals, physical characteristics of the metal, corrosion of metal, heat treatment, equipment of the workshop, etc. Furthermore, there are courses in the production laboratory, field training and thesis planning to integrate reality with things studied.

(12) Equipment for Welding and the Welding Process

Welding is one of the most advanced means for working metals, an accomplishment resulting from the scientific development of recent decades and one of the processing methods needed for the large scale engineering construction of heavy machinery in our national economical construction. For instance in manufacturing warships made of steel sheets, bodies of steamships, railroad train bodies, huge high furnaces and flat furnaces, boilers, big metal tunnels, hoisting equipment, tanks, guns, the outside parts of machinery, much welding is required. The reasons for such a demand are: (1) welding makes possible a high rate of production; this can be increased still further by automation; (2) welding is comparatively economical; (3) welding equipment is comparatively simple. Since welding improves as China's industrialization progresses, China needs many welding experts.

This department trains welding engineers who can weld various products and construction, design and adjust welding equipment and

welding construction and workshop design. Welding engineers can work in the various economical departments -- especially mechanical construction -- as well as in the various scientific research organizations and factory laboratories.

Students majoring in this department besides fundamental courses and fundamental technical courses, must also study the following special courses: physical chemistry, principles of welding, electric welding, welding construction, gas welding and electric arc welding, contact welding, electric welding equipment, welding construction testing, welding workshop design.

(13) Ship Building

Ship building is a technical science devoted mainly to the theory, design, and building of various kinds of ships. It is one of the very important industries in strengthening defense and developing water transport. The ship is the most economical and powerful transporting instrument. A strong fleet of transport ships can accelerate the exchange of materials, develop culture, cause a booming economy and assure the victory of national industrialization along socialist lines.

This department aims to provide China with ship building engineers who are healthy, versed in fundamental scientific theory and capable of designing and building ships.

Besides fundamental engineering courses, the main courses of this department are mechanics of ship structure, hydrodynamics, hydrostatics, hydroresistance, principles of propulsion, ship construction, ship equipment, ship equipment and system, ship yard organization and planning, ship design, etc.

(14) Ship Machinery

A study of ship machinery involves the study of how ships are powered and how this powering is explained by thermoengineering theory. This subject is studied so that machinery may be improved, machinery efficiency may be raised, and machine potential developed and extended. It is a necessary link in our newly developed marine industries.

This department aims to train marine machinery engineers to undertake engine work in ship repairing in the machinery section of the marine departments and aboard big ships.

Besides such theoretical political sciences as the revolutionary history of China, fundamentals of Marxism and Leninism, the fundamental technical courses are theoretical dynamics, mechanics of materials, principles of machinery, metal engineering, thermodynamics and heat transmission, etc. Special courses are the ship boiler, the ship steam engine, the internal combustion engine of the ship, the auxiliary machinery of the ship, electric equipment in the ship yard, ship building, and ship repairing, etc.

(15) The Automobile

The automobile is produced by highly automatic mass production methods. The automobile industry is built upon the most advanced scientific technology. Today in the First Five-Year Plan China has already begun to build up its own automobile industry. Following our people's economic development, the automobile industry will develop further on a grand scale. That is to say China needs many, many automobile engineers.

This department will train automobile design engineers.

An automobile design engineer must master much knowledge. For instance, in the course of design and calculation of automobile and motor, students are going to learn to design various kinds of parts; in the course on automobile and motor theory students will learn how the motor functions and how an automobile works. They will also learn how to build an automobile, and must understand the problems encountered in operating it; therefore, they must learn automobile manufacture engineering, automobile operation and repair, etc.

(16) The Tractor

The tractor is essential to agricultural mechanization and collectivization.

The task of the tractor department is to train engineers to design tractors.

The future tractor design engineer must study tractor construction; principles, design and calculation for the tractor and its motor. He must understand how the motor functions and how the tractor operates in the field. He must also know how to design the most durable, the strongest, and the most fuel-saving type of tractor. To design a tractor, one must first understand how to make the tractor, how it operates and how it is repaired; therefore, the tractor designer must study tractor manufacture engineering, tractor operation, and repairing, etc.

(17) Passenger and Freight Car Manufacture

Trains and the railroad are very important in transportation. Besides the locomotive, many passenger cars and freight cars are

needed to form a train. Therefore it is necessary to mass design the manufacture of all kinds of cars for different purposes. Engineers trained by this department should be able to undertake the designing of railroad transportation cars and to direct production and research in the car factory.

To accomplish the above-mentioned tasks, this department besides offering fundamental courses, basic technical courses, also offers the following courses: construction mechanics, car design and construction, car manufacture, car operation and repair, etc.

(18) The Manufacture of Mining Machinery

Mine machinery includes excavation machinery, transportation machinery, the mine hoist, water-drainage, ventilation and air-compressing machinery, mine-dressing machinery, etc, these various types of machinery used in the mine. The essential task of the mining industry in socialist industrialization is to adopt modern technology on a large scale, to mechanize all the awkward and difficult processes of mine industry production in order to achieve safe, mass production. To solve such an extremely important problem in China's mining industry, the mine machine-building industry must be established and developed, so that the needs for various kinds of mine machinery in China's mines can be met without interruption.

This department was established to train engineers who can master machine-building knowledge and can design mine machinery. Graduates of this department not only can take part in projects in the mine machinery design departments, but can also undertake technical production work in the mine machine factory. The main courses of this department are: excavating machinery, transportation, loading and filling machinery, the mine hoist, water-drainage, ventilation

and air-compressing machinery, dressing machinery, mine machine building, factory industrial economical organization and planning, etc.

(19) Mine Machine Building (Short course)

This short course aims to train higher technicians for mine machine building. These technicians must be able to understand mine production processes, they must be familiar with the characteristics and construction of the various types of mechanical equipment needed in mine production (the coal-cutting machine, the coal-loading machine, mine transportation, lifting, air-compressing, ventilation and drainage, etc), they must be able to master the technique used in processing mechanical parts, be able to direct and organize the partial production process (mainly in the mechanical processing workshop), and be able to undertake tasks independently in the mine machine-building workshop or mine field. This they must be able to do if they are to become the right-hand men of the engineers. The main courses of this department are: principles of machinery, mechanical parts, differential and technical measurement, metal cutting and knives, the metal cutting bed, mine machinery and mine machine-building, etc.

(20) Metallurgical Machine Equipment

Production in the modernized steel factory reaches several thousand tons a day. It would be unthinkable to convey, load, or unload so much steel by manpower throughout the whole production process. Besides, all the metallurgical production processes are closely linked; therefore the modern factory is characterized by a high degree of mechanization and automation in the metallurgical production process. Mechanization and automation not only serve

to improve labor conditions, but also guarantee an improvement in the number of products produced and their quality.

Due to the complexity of the production process (as, for example, when ore is refined to make iron or steel and then when these metals are rolled and forged into products), the mechanical equipment in metallurgical factories is of many types. All of these are huge and powerful, as well as complicated and precise.

This department aims specifically to train metallurgical mechanical engineers who can design and improve the mechanical equipment of the metallurgical factory, who can manage and direct the transportation, installation, maintenance, and repair of mechanical equipment.

After graduation students can work in the heavy machine factory, in the design organization (in the factory manufacturing metallurgical equipment), in metallurgical factory workshops, and in educational and scientific research organizations.

Required courses in this department are: Russian and politics (fundamentals of Marxism-Leninism, political economics, and Chinese revolutionary history); fundamental courses: mathematical physics, chemistry, mechanics; fundamental technical courses: descriptive geometry and mechanical drafting, factory training; courses in electric machines: electrical engineering; metallurgical courses: general metallurgy, metallography and heat treatment; courses in mechanics: hydraulics, hydraulic machines and blasting machines, heat engineering, principles of mechanics and mechanical parts, crane and transportation machinery, lathes and cutting machines, mechanical parts and differential mechanisms, the foundry, metal processing and welding; civil engineering courses: general

principles of civil engineering and metal construction; special courses: installation and repair of mechanical equipment, the making of machines, electrical equipment and automation in the steel factory, and mechanical equipment in the steel factory.

(21) Machinery for Mining Petroleum and Natural Gas and Equipment for it

The petroleum mining machine is a special machine used for drilling the well and for drilling for petroleum and gas, e.g., a crane that can lift 200 t and the oil-drilling machine that drills oil from the bottom of a well 1,000 or 2,000 m deep. As socialist construction in China proceeds, the petroleum industry will certainly develop rapidly. To open oil fields on a grand scale, various highly efficient types of automatic mechanical equipment are necessary, so that wells may be drilled quickly and much oil may be drilled. Because China's mines lack equipment and mechanical and technical cadres, it is urgent that this department train many engineers who will devote themselves to mine machinery. Thus the constantly growing needs of the mines will be met.

Besides athletics, politics, and fundamental courses, the main courses included in the students' 4 years of study are: design theory and techniques for installing and repairing mine machinery, production processes used in drilling the well and drilling for oil, machine-building methods, workshop organization and management, etc. These courses, 4 laboratory courses, and some courses in designing, plus the planning of the final thesis, train students to be petroleum mine mechanical engineers, who after graduation can undertake the following tasks in work with mining machinery: organization, direction, the planning of improvements, repair, equipment, building

and operations, etc, or the designing of the essential mechanical parts.

(22) The Machinery of the Petroleum Refining Factory and its Equipment

The refining of natural gas and oil are both complicated processes which use many types of apparatus which must meet special requirements for quality and quantity. For the large scale production of various high quality petroleum products urgently needed for China's national defense and her economy, big automatic oil factories which are totally mechanized must be built. In the past research experts on the machinery of oil plants in China could be numbered. But, now, whether or not the Chinese petroleum industry can rapidly grow strong depends heavily on whether or not we can quickly design and manufacture these machines and this equipment by ourselves.

This department aims to train petroleum plant mechanical engineers. Technically, these engineers must be able to master the theory and technique of the design, installation, repair, and operation of petroleum machinery and its equipment. Mechanical engineers in the petroleum plant must not only have a thorough knowledge of mechanics but must at the same time have a good foundation in chemical engineering.

Students in this department should study the following courses: general fundamental courses: politics, Russian, mathematics, physics, chemistry, etc; fundamental technical courses: mechanical drafting, principles of mechanics, mechanics of materials, electrical engineering, thermodynamic engineering, physics, chemistry, etc; and special courses: the installation and repair of machinery

and equipment for the petroleum plant (or oil plant), the manufacture of machinery and equipment, measurement and automatic control instruments, petroleum chemistry and engineering (or oil chemistry and engineering), etc.

(23) Machinery for the Production of Chemicals and its Equipment

The department which deals with machinery for the production of chemicals and its equipment is comparatively new. For large scale economical construction in China this department has the task of training many mechanical engineers who will be able to undertake the maintenance, repair, and installation, etc of the mechanical equipment in chemical factories, or who will be able to do that kind of work in the chemical engineering sections. Unlike general engineers, they are versed in chemical engineering and can at the same time work in the chemical engineering sections.

The importance of the chemical mechanical engineer's position in the chemical engineering factories is now growing daily. The progress of the production process in all chemical factories entirely depends on the normal operation of the mechanical equipment; for this chemical engineers shoulder a very great responsibility. Meanwhile, following China's construction along socialist lines and her socialist reformation, many chemical factories must be built, expanded and improved; thus many chemical design engineers are needed. Therefore, it is obvious that this department's role in China's construction along socialist lines is very difficult, but at the same time very glorious.

Besides the general fundamental courses, the main courses in this department are: mechanics, machine parts, metal working techniques,

electrical engineering, principles of chemical engineering, substances used in chemical engineering, chemical engineering including mechanical calculations and principles of design, etc.

(24) Machinery Used in Light Industry and its Equipment (Textile Machinery)

The textile industry is China's essential light industry. Before liberation, China had to depend on other countries for most textile machinery. This department was established after liberation in order to develop China's national textile industry so that it could meet our people's needs.

This department aims to provide textile machinery engineers with the technical knowledge of production needed to design, improve and manufacture textile machines and to make it possible for them to participate directly in the design and production of the textile machine industry, so that the necessary equipment for developing China's textile printing and dyeing industry may be produced.

Besides the general fundamental courses, this department offers these fundamental technical courses: mechanical drafting, theoretical mechanics, mechanics of material, principles of mechanics, mechanical parts, metal material engineering, metallography and heat treatment, heat engineering, electrical engineering, the metal cutting machine, cutting principles and knives, factory training, etc; its special courses: cotton textile engineering, the manufacture of machines for mating textiles, the manufacture of cotton textile machinery, textile machinery industrial economics, industrial organization and planning, safety and fire prevention technique, etc.

(25) Crane and Transport Machinery and Their Equipment

Crane and transport machinery is very important in modern industrial construction. It is not only essential in all factories, but is also widely used in all seaports, ship yards, and construction places. It not only lightens the heavy physical labor of the workers, but can also raise the production rate, cut costs, and, at the same time, establish a continuous as well as systematic production cycle. As socialist industries develop still further, mechanization and automation in construction will increase and the function of the crane and transport machine will become even greater.

Experts trained by this department should be able to undertake the design and installation of the crane and transport machine. They can design and install the crane and transport machine in the factories. They can also pursue research work on the crane and transport machinery in scientific research organizations.

Engineers trained by this department should have broad technical and theoretical knowledge in this field (including a knowledge of the different ways of building and designing the crane and transport machines used in the various industries). Therefore, students must study hard the various kinds of periodical and continuous hoists and transport machines. Besides the fundamental courses and the fundamental technical courses, they must also study construction mechanics, metal construction, and the following special courses related to hoists and transport machines: the excavating machine, the electrical equipment and heat installation of hoists and transport machines, elevated lines, rail lines, and lines without rails, etc.

(26) Precision Instrument

The precision instrument is used to examine and control the quality of the product in modern mechanical manufacturing industry. In the mass production of machines requiring high accuracy in their construction like airplanes, automobiles, and machine beds, very precise instruments must be used to measure and examine each and every mechanical part to insure the quality of the whole product. During China's industrialization along socialist lines, the technical standard of the machine-building industry should be rapidly raised. In this field the designing, manufacture and application of the precision instrument play a very important role.

This department aims to train for China engineers who can design, manufacture, and apply precision machine instruments. They can undertake design and manufacturing work in the precision machine instrument factory, undertake testing in the precision machine factory, and do research on precision machine instruments in scientific research organizations.

In addition to the fundamental technical courses -- mechanical principles, mechanical parts, metal engineering, metallography and heat treatment -- this department also offers the following special courses: metal cutting in instrument manufacture, tools and machine beds, techniques in instrument manufacture, instrument parts and construction, accuracy in measurement and principles in the accurate building of instruments, the precision instrument, the measuring instrument in machine building, electrical mechanisms for testing measurements in machine building, applied optics, instrument factory and workshop design, etc.

(27) Optical Instrument

The optical instrument industry is a newly developed industry. Its task is to guarantee enough modern optical instruments during socialist construction for all the scientific research institutes, all the higher institutions of learning, and the laboratories of all the industries in our people's economy. It must also supply optical instruments for medical, military, drafting, aviation, marine, photographical and movie uses, etc.

Our department trains engineers to undertake the designing, research, and manufacture of optical instruments in various scientific research institutes and special planning organizations.

Students of this department, besides studying the fundamental courses in general machinery and optics, must also thoroughly study special courses on optics and on the manufacture of the precision instrument.

(28) Metal Cutting Processing (Short course)

Metal cutting processing is a technical science which studies how castings are made into mechanical parts and how these parts are assembled into a machine through the cutting process. In the various mechanical production processes, cutting processing is always important. Therefore, metal cutting processing is extremely important in the whole mechanical manufacturing technology.

This department aims to train higher technicians, possessing definite scientific theoretical foundation and mastering the advanced technology of metal cutting processing. They can mainly undertake operational technical work in the modernized instrument factory, e.g., they can formulate regulations for techniques,

organize the production process, direct technical operations -- thus functioning positively in China's national construction along socialist lines.

Besides the general fundamental courses and fundamental technical courses, this department offers these special courses: differential and technical measurement, cutting principles and knives, the metal cutting machine bed, mechanical manufacture, mechanical manufactory organization and planning, and safety and fire prevention technique.

(29) Metal Cutting Tools (Short course)

Metal cutting tools are the various kinds of knives used in making various kinds of mechanical parts. The quality of the design and manufacture of metal cutting tools directly influences the quantity and quality of the parts manufactured; that is, it influences the quantity and accuracy of the machines produced, and consequently influences all construction in national industrialization along socialist lines.

This department was established to train higher technicians for China, technicians who will be able to design and manufacture metal cutting instruments and to undertake the design and manufacturing work involved in producing metal cutting tools. Obviously, such technicians will be extremely important in China's national industrialization along socialist lines.

Besides the general fundamental courses and fundamental technical courses, this department offers these special courses: principles of metal cutting, knives, metallography and heat treatment, differential and technical measurement, the metal cutting machine

bed, etc. Furthermore, it also offers factory training and production training to go with mathematics.

(30) Machine Tools

The cutting lathe is the basic machine for machine building. Not one of the metal cutting processing processes, like the operation of the lathe, planing machine, milling machine, drill, etc, does not depend on the machine tool for the manufacture of various kinds of mechanical parts. To meet the needs of Chinese national large scale economic construction, higher industrial education should train enough technical experts who can master the design of the machine tool and repair its parts.

This department's chief task is to train higher technicians to design or repair the equipment of the machine tool. They can work in the following places: (1) the design department or equipment workshop in the metal cutting machine bed factory, (2) in the factory or scientific research organization where they would participate in design or laboratory work, (3) in the operational department of the factory where they would do research on the equipment and production process of the metal cutting machine bed, (4) in the equipment and repair section of the factory where they would do research on improving existing equipment and on repairing the metal cutting machine bed.

The main courses of this department are: the machine tool, metal cutting principles and knives, techniques of machine building, and the equipment and repair of the metal cutting machine bed, etc.

(31) Foundry

This department aims to train higher technicians for the foundry. Graduates of this department should be able to undertake the following in the foundry workshop of the machine factory: (1) in execution and production they should be able to organize independently and proceed with partial production, testing and management, under the supervision of the workshop director or factory director; (2) in the field of model construction they should be able to formulate some routines for making general foundry articles, control the quality of the products, design molds, tools, and simple molding plates; (3) in the field of workshop design they should be able to operate, maintain, and proceed with the partial or entire arrangement under the supervision of the engineer.

Because students must undertake the above tasks after graduation, they should complete the following courses in 2 years of study: fundamental courses: Chinese revolutionary history, fundamentals of Marxism-Leninism, athletics, mathematics, chemistry; fundamental technical courses: mechanical drafting, theoretical mechanics and principles of mechanics, mechanics of materials, foundry workshop equipment, the foundry furnace, principles of foundry workshop design, industrial economical organization and planning, and technical safety and fire prevention.

(32) Heat Treatment

Heat treatment is a very specialized technology. It is based on metallography and is applied to machine building.

For socialist construction the Chinese machine industry must mass produce complicated, precise, highly efficient, and long lasting machines. To reach this goal many mechanical parts have to undergo various kinds of heat treatment before and after processing; therefore, the heat treatment workshop has become a necessary and important part of all machine factories. This heat treatment department aims to train higher technicians, possessing rich knowledge and technology in heat treatment and related fields.

Besides politics, fundamental courses and fundamental technical courses, this department's main courses are: metal heat treatment, equipment for the heat treatment workshop, technical analysis, principles of metallurgy, mechanical test and examination of metals, industrial organization and planning, safety and fire prevention, etc.

VI. Manufacture of Electric Machinery and Electrical Apparatus

(1) Electric Machines and Electric Tools

This department aims to train electric machinery and electric apparatus manufacturing engineers (with the engineer title). After graduation, they will be able to do the following for China's construction along socialist lines: (1) design general electrical machinery like the transformer, alternate and direct current generator or general apparatus, including switches, control equipment, protection equipment and the relay; (2) organize electrical machinery or electric apparatus production processes and direct production methods; (3) do research into the designing and manufacturing problems related to electrical machinery or electrical apparatus.

This department is divided into 2 sections: electric machinery and electrical apparatus. Special courses are: electrical machinery, electrical apparatus, high voltage engineering, industrial electronics, electric operation, principles of adjustment, the power generating station and distribution system, the industrial economics of electrical machinery and electric apparatus manufacturing, industrial organization and planning of electrical machinery and electric apparatus manufacture, safety and fire prevention technique, etc, 10 courses. Special courses treat electrical machinery: special problems of electrical machinery, the design of electrical machinery, the manufacture of electrical machines. There are 3 courses on electrical apparatus: special problems of electrical apparatus, the manufacture of electrical apparatus, the transmission of current and electrical apparatus doing little work.

(2) Electrical Machine Building (Short course)

The fundamental task of this department is to train higher technicians, who possess a high level of political awareness, are healthy and can master modern electric machine building technique and can participate in the following concrete tasks:

(1) In production technology, they should be able to plan work procedure and adjust mechanical equipment and tools on the basis of the blueprint and production tasks;

(2) In testing technique, they should be able to master the techniques of testing products and electrical engineering material.

(3) In planning, undertake the design and drawing of general electric machinery and related mechanical parts; e.g., transformer, electro-motor, and calculation of the auxiliary equipment in the electrical workshop in the electrical machine-building factory.

This short course lasts 2 years. It includes the following studies: political theoretical courses: Chinese revolutionary history, political economics; fundamental courses: mechanical drafting, engineering mechanics, principles of electrical engineering, electrical engineering materials, etc; special courses: electrical machinery, electrical machinery design, electrical machine building, electrical engineering problems, etc.

(3) Electrical Insulation and Electrical Cable Technology

This department aims to train engineers in the uses of electrical insulation material and in the construction, design, and manufacture of electric cable. After graduation, they can work in the electrical apparatus and electrical machinery design organization, electrical cable factory or scientific research organization. They can also work in the production workshops of the electrical machine and electrical apparatus factories. In the senior years, this department is further divided into the following 2 special courses:

(1) Electrical insulation material and construction: the dependability and economy of electrical installation depends on the quality of the electrical insulation material and the degree of perfection in the construction of the electrical insulation of the electrical apparatus. To raise the quality of electrical engineering products (e.g., to diminish their size and weight; increase their resistance to heat and dampness, their mechanical strength, electrical resistance strength, and durability in general application) we must meet the needs of electrical machinery and electrical apparatus construction -- we must safely make new electrical insulation material. At the same time we must also study the method of manufacturing electrical insulators; we must design machinery and

apparatus for producing insulation material. Therefore, students of this department must study the physical and chemical principles of electrical insulation material and its manufacture and do research into problems related to the calculation, design, application, etc connected with it.

(2) Electrical cable technique: electric cable products are very significant for the Chinese people's economy. High tension wire and cable are necessary for electric supply. All the insulation copper wire used in the electrical cable distribution network, communication cable, transformer, and the various measuring instruments in the city are all manufactured by the electric cable factory. As a result the students of this department should study the theory of electric cable transmission, the theoretical problems related to electric cable resistance strength, and the calculation of heat produced by the electric cable, etc.

(4) Electronic Engineering

The application of electronics is very wide. Radio broadcasting, wireless telegraphy, cable telegraphy, and television are either already popularly used or will be widely used. All mechanical industrial departments use electronic devices to control manufacturing processes. Mine surveying and research into the upper layer of the atmosphere both need the assistance of electronic devices. And in modern military technique, the electronic position indicator again plays an important role. This department aims to train electronic engineers for the manufacture and design of electronic devices. In school they should thoroughly study fundamentals of electronics, step up transformers, transmitters, receivers, electrical waves, the antenna, etc. After graduation they

can undertake the equipment, design, manufacture, and testing of wireless receiving instruments, transmitting instruments, television equipment, and electronic navigation instruments. They can also work in the design organization or the equipment workshop of the electronic instrument factory.

(5) Electrical Vacuum Technology

This department is devoted to a new technology which developed from the achievements of modern physics and advanced industry. In the senior years this department is further divided into the following special courses:

(1) Wireless engineering electronics. Electronic engineers trained by this department can work in the factory and scientific research organization concerned with electrical vacuum devices used in various types of wireless communication (e.g., the vacuum tube used in broadcasting and receiving, the television and electronic position indicator, the special neon tube, neon devices, the X-ray tube, etc).

(2) Industrial electronics. Electronic engineers trained by this department can work in the factory and scientific research organizations concerned with various new electronic and ionic instruments, the transformer, the mercury vacuum tube, and the neon tube, etc, used in the various types of industrial control. They can also undertake work on alternating current.

VII. Chemical Engineering Techniques in General

(1) Inorganic Chemistry

The aim of the inorganic chemistry course is to train chemical engineers in the following basic areas: (1) the inorganic acid

industry, (2) the nitrogen fixation industry, (3) the inorganic salt and inorganic fertilizer industry, (4) the pure soda, caustic soda, and chlorine industry. Acids and alkali are the fundamental materials for all chemical industries and upon them depends the future development of all chemical industries. Products of the nitrogen fixation industry and the inorganic salt and inorganic fertilizer industry are urgently needed for developing industry, strengthening defense, and for improving and raising agricultural production. Therefore, these industries are important for the entire people's economy and for defense construction. They are part of the primary tasks of socialist industrialization. During 4 years of study at this department, students will obtain fundamental engineering training, much knowledge in scientific theory and production, and ability in chemical engineering designing and scientific research. After graduation they can work independently in inorganic chemical factories, combine theory and practice to improve production, and solve production problems; they may also undertake tasks in the design department, factory laboratory, or scientific research organization.

During the 4 years of study, the main courses are: fundamentals of Marxism-Leninism, political economics, advanced mathematics, physical chemistry, mechanical parts, chemical engineering processes and equipment, inorganic chemistry, chemical thermodynamics; special courses are: the nitrogen fixation industry, the inorganic acid industry, the inorganic salt and inorganic fertilizer industry, the soda and lime and chlorine industry, etc.

(2) Refractory Material (Short course)

During the large scale industrial construction currently planned, many industries, especially the steel industry, urgently

need a great quantity of refractory materials. Iron refining and steel refining processes consume much refractory material; at the same time, various types of refractory materials are used: e.g., Martin furnace steel refining uses almost all types of ordinary refractory materials. If the refractory materials are not up to standard, then the steel refining furnace must often stop work for repairs; thus production is affected. On the contrary, with higher quality refractory materials, the refining temperature can be raised, consequently, not only the output but also the quality of the products are improved. To meet such urgent needs this refractory department was established to train higher technicians to undertake the manufacture of refractory material.

Besides the fundamental courses, the special courses of this department are: refractory material technical equipment, refractory material furnace and drying equipment, techniques in using refractory material and the application of refractory material, etc. Every course emphasizes theoretical knowledge as well as practical technique. After graduation, students can master the production process in the refractory material factory, operational technique and the characteristics of equipment. They can work independently in any section or any workshop of the refractory material factory under the engineer's direction, they can direct the workers to organize production, direct the technical operation, and improve production on the basis of the above-mentioned foundation and within the scope of their work assignment.

(3) Cement Production

Cement is the essential constituent in steel and cement construction. It is also one of the main materials in defense construction, hydraulic engineering, industrial, and civil construction.

The cement industry is a heavy chemical industry; it is equipped with heavy machinery and uses silicate as the main material. It plays an important role in realizing national industrialization along socialist lines.

The cement production engineering course aims to train cement industry engineers, who, after graduation, can join in the production technical management of a cement factory, or participate in designing a new cement factory or expanding and rebuilding existing cement factories.

This department lays more emphasis on the mechanical courses than the other chemical engineering departments. Besides the following courses generally included in the special courses on silicate - like silicon chemistry, silicate physical chemistry, geological rock mineral crystallography, etc -- the chief courses are: mechanical equipment for producing cement, furnace and drying equipment, techniques in using cement, principles in designing the cement factory, etc. To study these courses, students must have a solid theoretical knowledge of chemistry and a good foundation in mathematics and physics.

(4) Silicate Industry

The cement, refractory material, china, glass and clay industries occupy a large sector in the people's economy. In general they comprise the silicate industry. Cement is the essential material in defense and fundamental construction. Refractory materials are used mainly in the metallurgical industry. Steel refining requires many types of refractory materials in large quantity and they must be of excellent quality. The more generating stations that are built, the more high tension insulated magnets are needed; these

must be provided by the ceramic industry. Construction needs much glass for doors and windows. Optical instruments need optical glasses. Scientific laboratories need various kinds of testing glasses. Finally with the daily improvement of the people's living standard, the vast number of workers and farmers need a great quantity of claywares.

This department aims to train engineers, capable of mastering silicate industry production theory, of managing and improving production, and of designing.

The courses in this department require 4 years. Its special courses are: the physical chemistry of silicates, silicate industrial mechanical equipment, the silicate furnace and drying equipment, general techniques in using silicates, etc. In addition, the following special courses are offered: cement, refractory materials, ceramics, and clay, etc.

(5) Organic Compound Engineering

The organic compound industry uses steamed coke products for various kinds of intermediates and products. This department specializes in dyes and intermediates; it aims to train chemical engineers capable of working in the dye and dye intermediate factory.

The dye industry is one of the basic chemical industries. With the daily progress of China's economical construction, the people'e living standard is constantly rising and the types and need for dyes will likewise grow day by day. At the same time this department is also closely related to the pharmaceutical and defense chemical industries. Before liberation, China, under the control of the imperialists and the reactionary government, had almost no

dye industry. But just a couple years after liberation, especially since the beginning of large scale economical construction, China's dye industry has already definitely developed, with many new factories being built. Therefore, many cadres for economic construction are urgently needed; they must have advanced technical skills in the dye industry and a specified level of political awareness; they are urgently needed to join in the tide of China's great socialist industrialization.

In addition to the fundamental courses common to the chemical engineering departments, this department offers the following courses: special courses: organic compounds, a course which establishes the theoretical foundation of this department; chemistry and techniques of intermediate and dyes and dyes and intermediates factory equipment, which discusses the practical method of production, how dyes and intermediates are produced and the application of dyes, which introduces the theory and application of dyes in dyeing various kinds of fibers.

Students aspiring to enroll in this department must not be color blind.

(6) Artificial Fiber Engineering

This department trains engineers for the manufacture of artificial fiber. At present, to meet construction needs in China special emphasis is temporarily being put on artificial rayon.

To increase the Chinese output of textile fiber, to enrich and multiply the variety of textile fiber, and to satisfy the special demands of defense and industry for fiber, we must expedite the establishment of a Chinese artificial fiber industry. On the

other hand before we can establish this new industry we must train experts in artificial fibers.

The main courses of this department are: chemical engineering processes and equipment, high-molecular weight chemistry, the general theory of compounds of high-molecular weight, chemical art of artificial fiber, artificial fiber factory mechanics, dyeing artificial fiber, construction fundamentals (including heating and ventilation), safety technique and fire prevention, industrial economics, industrial organization and planning.

Students aspiring to enroll at this department must not be color blind.

(7) The Engineering of High-Molecular Compounds (Chemistry of Plastics)

This department aims to train engineers in high-molecular compounds. It puts special emphasis on the plastic industry in order to provide students, upon the foundation of the general fundamental courses, and organic combined mono(?) theory, with the fundamental theory and technique of plastic manufacture in the various plastic factories, to make sure that they know the mechanical characteristics of the plastic factories, that they master operational methods, can apply their acquired scientific knowledge and engineering technique to integrate our national resources to constantly improve production, raise the quality of output and lower costs, and can creatively push the Chinese plastic industry forward so that the materials needed by the daily growing electric industry and consumers industry can be fully supplied. Besides the courses in general chemistry, chemical engineering, and mechanical engineering, this department offers the

following special courses: plastic art, molding engineering, the equipment of the plastics factory, and testing of plastic characteristics, etc.

(8) The Engineering of Important Organic Compounds

Main organic compound engineering is one of the new departments established by Chinese higher technological institutes. This department trains higher technicians for compound rubber factories.

This department is divided into 2 special courses: the compound rubber industry and fats organic compound industry. At present, to meet the need of Chinese economical planning, China first established a special course on the rubber industry.

The rubber industry directly affects the defense industry and the people's livelihood. A shortage of rubber in a country will paralyze defense, stop communication and transportation, close factories and directly affect the daily life of the people.

Consequently, China established this department in time for the planning of national industrialization along socialist lines.

Students in this department, besides studying the general courses of the chemical engineering department, must also study the following special courses: main organic compound chemistry and industry, main organic compound factory equipment, physical chemistry fundamentals of the compound rubber industry, and compound rubber technique, etc.

(9) Rubber and Natural Rubber Technique

There are two kinds of rubber: natural rubber and artificial rubber. The rubber industry is very important in Chinese socialist

construction. It is essential for communication and defense as well as for industry. For instance, tires, rubber tubes and wire insulators for airplanes and automobiles, medical instruments, many industrial products and parts, even the raincoat and rubber boots we use daily are all made from rubber.

In China's socialist construction rubber is as valuable as metal, coal, and petroleum. To meet the urgent need of Chinese economical construction, the rubber and natural rubber industry are going to be greatly developed.

The rubber and natural rubber technique department trains engineers to master a series of production processes from the processing of the natural rubber to the finished rubber product, as well as the principles of designing machines for making rubber, to actually operate and improve production technique and to design machines.

(10) Natural Rubber (Short course)

This department aims to train technical cadres for the rubber industry, to have them master the series of production processes through which natural rubber is finally transformed into finished rubber products, to provide them with fundamental knowledge in the structural characteristics and application of rubber mechanics as well as practical operational technique.

The main courses of this department are: the physical chemistry of rubber, rubber manufacturing technique, the production equipment of the rubber factory, techniques in the use of raw rubber, testing the physical characteristics of rubber, rubber analysis, etc.

The applicant for this department must not be color blind.

(11) Petroleum and Natural Gas Engineering

This department treats the processing of underground petroleum into various kinds of fuel, lubricating oil and organic mixtures, the efficient application of petroleum, and the applications of natural gas in chemistry.

The modern refining industry uses many kinds of physical and chemical processing methods, including many using catalysis. Because China's refining industry is just developing and the large scale industry established with the assistance of the Soviet Union also includes a modern refining factory, many experts are needed for improving production and for designing and research.

During the 4 years that the student studies in this department he acquires a thorough general knowledge of petroleum refining and gains further advanced knowledge in a specialized field. This enables him to master the most modern developments in this science so that he may become a technical engineer capable of independent work.

The main courses of this department are: petroleum and natural gas engineering, petroleum and natural gas chemistry, principles of processing and equipping the petroleum processing factory, chemical thermodynamics, safety and fire prevention, industrial economics, and industrial organization and planning, etc. Special courses are: the manufacture of motor fuel, lubricating oil and grease, etc. Besides foreign languages, mathematics, and physics the fundamental theoretical courses include: chemistry courses: inorganic chemistry, analytical chemistry, organic chemistry,

physical chemistry, and colloid chemistry, etc. Moreover, because engineers in this field must have a fundamental knowledge of mechanics and electricity to operate the electrical equipment in the refining factories accurately, students in this department must also study metal engineering, engineering drafting, mechanics, mechanical principles and mechanical parts, the flow and conveying of fluids, advanced thermodynamics, principles of electrical engineering and electrical equipment, etc.

(12) Industrial Analysis (Short course)

Analytical chemistry is a science devoted to the study of the physical construction of materials. It has direct, practical, and scientific significance in research on the appraisal and measurement of the construction of minerals and in testing general industrial materials and products. The fundamental aim of this department is to train higher technicians for scientific research and experiments.

The main courses of this department are: metal analysis, mineral analysis, water, coal, and petroleum analysis, instrumental analysis, etc. To integrate theory with practical technique, laboratory work in the various courses demands a considerably high proportion of the time. The main special courses are: (1) Metal analysis: the analysis of iron, steel, alloy steel, and the important ferrous metals and alloys; iron and steel analysis includes a speedy analysis of furnace control. This knowledge and technique are like the eyes of the steel factory, the machine factory and the industry making articles for defense. They are basic in directing and improving the work. (2) Mineral analysis: the study of the appraisal and measurement of the structure of various kinds of minerals, with special emphasis on China's chief mineral products: e.g., silicates, tungsten,

molybdenum, phosphorus, aluminum, etc. (3) Water, coal, and petroleum analysis: the appraisal of the chemical and physical characteristics of industrial water, fuel, and lubricants. (4) Instrumental analysis: with the constantly growing production of industry, the production section demands a speedy and accurate analytical method; at the same time it requires reducing labor as much as possible in the analytical process; we can use precision instruments to analyze the efficiency of light, electricity, and heat. The main content of "instrumental analysis" is the study of the most modern instrumental method of analysis.

(13) Fuel Chemistry Engineering (Artificial Petroleum)

China has rich resources of coal, crude petroleum, and natural gas and has already tapped them on a large scale.

Due to the great current need for liquid fuel (and lubricating oil), China already has an artificial petroleum industry of considerable size which makes various kinds of fuels, lubricating oil, and special products from the above materials. From now on, it will greatly develop.

The artificial petroleum industry uses drying, oxidation, catalysis, reduction, catalysis compounding, and other methods to turn solid fuel or natural gas into liquid fuel. Petroleum produced by such artificial methods must again go through various processes before it can be made into different kinds of products. Due to the daily growth of the artificial petroleum industry following the demands of the Chinese people's economy, many experts are needed in this field to improve it and for design and research work in it.

In 4 years this department trains students to fully master specialized knowledge in artificial petroleum, and to acquire further knowledge in a specialized field so that they may master the latest developments in this science in order to become technical engineers capable of independent work.

The main courses of this department include: artificial petroleum engineering, artificial petroleum chemistry, working and equipping the artificial petroleum factory, principles of catalysis, chemical thermodynamics, safety and fire prevention, industrial economics and industrial organization and planning, etc. Special courses are: crude petroleum drying and crude petroleum processing, high pressure reduction compound petroleum, etc. Fundamental theoretical courses, in addition to a foreign language, mathematics, and physics include the following chemistry courses: inorganic chemistry, analytical chemistry, organic chemistry, physical chemistry, and plastic chemistry, etc. Furthermore, because engineers must have fundamental mechanical and electrical knowledge to accurately operate the mechanical and electrical equipment in the refining factory, students in this department must also study metal engineering, engineering drafting, mechanics, mechanical principles and mechanical parts, the flow and conveying of fluids, advanced thermodynamics, principles of electrical engineering and electrical equipment, etc.

(14) Fuel Chemical Engineering (Coking and its Use in Processing Chemical Products)

The steel industry is the central link in socialist industrialization, whereas the coking industry is a necessary constituent of the steel industry. At the same time, chemical products processed

from coke also form the basis of the organic chemistry industry and the defense industry. The aim of this department is to train engineers for coking and for using coke in processing chemical products.

Upon the foundation of the general fundamental courses and general technical courses the students in this department must study the chemistry of coal and coking and their use in processing chemical products. In addition they must study such special courses so that they may master production technique in coking and in the factory where it is used for processing. They should be able to improve production and pass a special course on design and fulfill thesis planning requirements to obtain fundamental training in designing.

VIII. Food and Seasoning Technique

(1) Food Processing Technique and Food Management

This department applies modern scientific principles and techniques to pounding rice, making flour from wheat, to mechanical storage and food management. Since the whole country adopted a policy of controlling food purchases and sales food processing and storage is not only difficult and burdensome, but also demands advanced scientific technique. How to raise output in processing and how to decrease damp, mildew, and insect damage during storage is an even more important political task. Moreover, this department also treats the application of the by-products of food processing and determining how to get the maximum good from it.

This department aims to train food technique engineers able to fully master food processing and storage technique and capable of planning procedures.

Besides the many fundamental courses of the mechanical and electrical department and the chemistry department, this department's main courses are: pounding art, flouring art, the mechanized barn, production equipment and its automation, compound feed production technique, etc.

(2) Yeast Manufacture Engineering

This department applies the chemical function theory on bacteria and yeast enzymes to industry for producing alcohol and alcoholic beverages. Alcohol is essential for the defense and chemical compound industries. It also has many uses in medicine and for fuel. The alcoholic beverage industry meets the demand of the raising material standard of the great mass of workers and meets their beverage needs. Besides, this department also treats the subject of fermenting liquor with nonfood material so that food may be saved. It also includes research into the manufacture of certain industrial solvents.

The aim of this department is to train engineers in the techniques of using yeast to fully master production processes in the yeast industry and design.

The courses of this department can be divided into 2 systems: the engineering system, including mechanical, electrical and good industry production processes, and mechanics; and the chemical yeast system, with alcohol industry, beverage industry, fermenting equipment and automation and other special courses as integrating courses.

(3) Sugar

Sugar is a substance essential to health; therefore the sugar industry is a nourishment industry, or health industry. Ever since

the establishment of the new China, the living standard of workers and farmers has generally improved. It in turn caused a greater demand for sugar. Consequently the sugar industry is expanding daily.

The aim of this department is to train sugar manufacturing engineers.

This department's main courses are: inorganic chemistry, analytical chemistry, physical chemistry, the sugar producing process and technique, the general technique of producing sugar products, the technique of producing sugar from sugar cane and certain vegetables, etc.

ix. Paper Manufacture, Making Paper with Paper Pulp Produced from Processing Timber

This department trains engineers in making paper with paper pulp.

We know that making paper from paper pulp is an essential industry in the area of light industry. In the great task of raising the people's cultural level, making paper with paper pulp has an even more significance.

After the liberation China's paper-making industry under the guidance of the government recovered very well and has been developing, expanding, and constantly preparing to build new paper mills. Consequently cadres in this field are needed.

An engineer in the field of paper-making from paper pulp during his 4 years of study must receive education in many fields.

In the field of operation, students besides studying the fundamental courses, must also take the following technical courses: mechanical parts, principles of electrical engineering, thermodynamics, chemical processing and equipment. They should also study a certain amount of special courses, so they may acquire high scientific competence in making paper with paper pulp.

X. Light Industry

(1) Fur and Leather Dressing

The aim of this department is to train leather engineers that combine a fundamental knowledge of various chemical fields with the related principles of biochemistry, protein chemistry, and plastic chemistry. Its purpose is to train students to master specific theory and manufacturing technique in leather manufacture and to provide them with definite designing ability, so that after graduation they can fully utilize our rich national resources of leather and fur materials and of plant, tannin, and mineral dressing material to mass produce all kinds of leather and fur goods to satisfy growing needs in defense, industry, and civilian consumation.

Besides the basic chemistry courses and basic mechanical courses, the special courses of this department are: (1) leather manufacturing (including the preparation of raw leather materials, leather dressing, dyeing, oiling, fixing, and products testing, etc); (2) fur and leather nitrification; (3) plant refining and the manufacture of mineral dressings, etc.

(2) Fiber Material Chemical Engineering

This department trains printing and dyeing engineers.

To meet the people's growing need for higher quality and more textiles and also to improve the production method, to automatize the production process, to improve the quality of output and to lower production cost, training experts in advanced printing and dyeing for industrial construction has a definite function.

The main courses of this department are: chemical techniques, chemical dyeing technique, chemical engineering processes and equipment, the mechanical technical foundation of fiber material, chemical techniques in using fiber material, fundamentals of construction (including heating and ventilation), safety technique and fire prevention technique, industrial economics, industrial organization and planning, design of the printing and dyeing factory, the use of processing machinery and its repair, etc.

The color blind cannot major in this department.

(3) Mechanical Techniques in Making Fibers

This department covers the making of fiber materials (e.g., cotton, hemp, silk, artificial fiber from furs, etc) into gauze, thread, textiles, etc. Therefore it is called mechanical techniques in making fibers; it is generally called textile engineering.

Consequently, textile engineers who have been trained by this department can use advanced scientific technique after graduation to undertake projects in the textile industry, to construct new and modern textile factories, and to reform the old factories so that the Chinese textile industry may exercise its greatest power and use all its capacity for supplying the people's need for yarn goods and for saving money to support the construction of heavy industry.

This department is divided into various specialized courses according to the types of fibers and the way they are processed. At present there are only 2 specialized courses, one on cotton and one on textiles. Besides the various fundamental courses, the fundamental technical courses are: engineering drafting, theoretical mechanics, mechanics of materials, mechanical principles, mechanical parts, techniques in working metals, etc. Special courses treat the following: fiber, fiber material, mechanical techniques. In their more advanced years students may delve more deeply into various specialized courses such as those on mechanical processing methods, method mechanics, the method of testing for the quality and quantity of the products and their relation to various factors. Then they should also study these courses: the industrial economics of textiles, industrial organization and planning, heating and ventilation, factory planning, textile machine design, and safety and fire prevention, etc.

(4) Fiber Testing (Short course)

This department trains advanced technicians for the preliminary processing and testing of fiber material. They must be (1) familiar with the characteristics of textile fiber, capable of mastering the preliminary method for processing fiber, of making suitable industrial material from fiber to meet the needs of textile factories; (2) familiar with the method of testing textile fiber, capable of mastering fiber classification and of estimating the economic value of the fiber; (3) capable of operating and improving precision testing instruments, and capable of undertaking research testing work.

The main courses of this department are: theory of fiber material, fiber classification, processing fiber material, cotton and cotton processing, cotton economics, instruments, statistics analysis, heating and ventilation, fundamentals of humidity and hydraulics.

XI. Printing (Not Open for Enrollment This Year)

XII. Surveying, Drafting, Meteorology, Hydrology

(1) Aerial Photographical Surveying

Aerial photographical surveying is the science of making photographs of the earth made from an airplane into topographical maps. Due to the transparent projection of the photographs, complicated optical instruments and calculating methods are needed to draw the photographs into accurate topographical maps that show the earth's surface. This type of surveying can make much of the field surveying work into indoor work. It thus saves manpower, material, and time. At present, more than 90% of the topographical maps of the Soviet Union are made by aerial surveying.

This department trains aerial surveying engineers to survey and make large topographical maps for all kinds of economic construction.

The main courses of this department are: general surveying, differential surveying, equal altitude surveying and astronomy, map making, geomorphology, photographic surveying, solid photographic surveying, photography and aerial photography, fundamentals of aviation and aviation meteorology, electronically operated aerial cameras, etc.

(2) Engineering Surveying

This department trains for China surveying engineers capable of undertaking the nation-wide controlled surveying, map surveying, drawing, and operational surveying required by large scale projects; they should also be able to do the investigation for preliminary planning work related to construction.

During the socialist construction of China, which is endowed with a huge territory, economical planning must be founded on a strict scientific basis. Nation-wide surveying work must develop gradually.

To undertake any type of construction project (be it a city, hydraulic works, the factory, mine, road, etc) the primary task is to survey and draw an accurate and detailed map for further planning. Therefore/ surveying is very important in Chinese construction projects.

In nation-wide surveying and in surveying for big projects (e.g., the Hui River project), due to the hugeness of the area and the fact that the global surface must be drawn onto a plane map if the needed accuracy is to be attained and because the different global surfaces must be connected into one system, advanced surveying technique and more advanced mathematical methods must be used for calculation.

Before and during the construction of a project, the surveying method must also be used to put plans on paper into practice. Therefore surveying engineers must also know how to design civil and hydraulic engineering projects.

The main courses of this department are: general surveying, differential surveying, advanced surveying, photographic surveying,

applied astronomy, engineering surveying, map making, gravitational surveying, investigation and designing of construction projects, etc.

(3) Engineering Surveying (Short course)

This department trains for China higher surveying technicians to undertake the map drawing and operational surveying needed in large scale projects.

Cadres who have taken this short course play the same role in Chinese construction along socialist lines and socialist reformation as cadres who had taken the department's 4-year course in this field.

The main courses of this short course are: general surveying, differential surveying, advanced surveying, applied astronomy, engineering surveying, general principles of civil and hydraulic engineering, etc.

(4) Ground Hydrology

This department trains hydrological engineers to participate in hydrological analytical research work so that they may thoroughly understand and master the rules governing change in hydrological phenomena in nature. Thus these rules can be used to reform nature.

Following the progress of Chinese socialist economical construction, naturally various types of hydraulic projects will be undertaken. From now on, many hydraulic stations, dams, high dams, ship gates, ports, waterways, watergates, and irrigation systems, etc will appear in rapid succession in China.

To utilize natural hydraulic resources most efficiently, and to construct these hydraulic projects most safely and most economically, we must pay double attention to the direct object of

these projects -- water. The changes water on the earth undergoes is called hydrological phenomena. Only after we fully understand and accurately master hydrological phenomena and obtain perfect hydrological data through analysis and research can we be assured of the above-mentioned goals -- safety and economy. Otherwise, even if hydrological work is only slightly neglected, hydraulic construction projects will certainly go wrong, causing serious damage. For instance, under general circumstances, if the flood level is underestimated, it will cause difficulty and damage construction. It may even reach such a serious stage that the construction is totally damaged by flood, thus causing a man-made disaster. On the other hand, if the flood level is overestimated the engineering design can not be economical; this will cause serious waste. We already learned such lessons during the construction of our national hydraulic project. After these the people gradually began to pay the proper attention to hydrological works. Besides, if a good hydrological forecast is given, we can further prevent and stop many floods. For important metropolises and industrial bases the significance of a hydrological forecast is even more obvious.

The teaching plan of this department prescribes the following fundamental and special courses for the 4 years of study: advanced mathematics, physics, surveying, geology, meteorology, weather, hydraulics, hydrology, hydrogeology, hydrotesting and hydroanalysis, hydroforecasting, research on hydraulic investigation, etc.

XIII. Construction and Metropolitan Engineering

(1) Construction

This department trains construction design engineers to undertake the complex and burdensome task of dealing with the construction

projects in our national economic planning. From socialist and realistic principles, from an understanding of the achievements of world construction art, and from an integration of our excellent national tradition with advanced modern scientific technology, construction engineers should design residences, public and industrial structures to meet the needs of the Chinese people. They should relate construction to city planning and the surroundings, using the most economical method to achieve practical, durable, and artistic results.

There are 7 fundamental courses in this department: (1) social economics; (2) general education; (3) fine arts; (4) history; (5) construction theory; (6) construction design; (7) engineering technology.

Students who want to enroll in this department must have a good foundation in fine arts.

(2) City Construction and Management

China's grand scale economical construction has already begun. With the constant execution of the people's plan for economical construction many new, beautiful, modern cities will appear in China's huge territory, and many of the old cities will be improved and expanded. To make every one of our cities economical, practical, beautiful, and hygienic, and to satisfy our people's daily growing material and cultural needs we should build neat and beautiful structures, modern communication and transportation routes, and underground sewage systems in every city. Thus many design and operational experts in the construction field are needed. This department undertakes the great task of providing them.

The special courses of this department are: city planning, construction, city roads, city transportation, sewage, city power supply, etc.

(3) Industrial and Civil Construction

This department trains construction engineers, having wide fundamental theoretical knowledge and expert ability in organizing construction engineering and operation. They must be trained in (1) the ability to design the structures of comparatively simple industrial and civil constructions; (2) the ability to calculate and design medium complex engineering constructions; (3) the ability to use the most advanced construction technique to organize and direct industrial and civil constructions, including complex engineering constructions.

The special technical courses of this department are: construction material; construction (including residential area planning), structural mechanics; construction machinery and construction production technique; sewage, heating, and ventilation; steel structure and welding; brick structures and steel and cement structures; foundation and bases; economical construction organization and planning; house structure and construction examination; safety and fire prevention technique, etc.

(4) Industrial and Civil Construction (Short course)

The short course in industrial and civil construction aims to provide higher technicians with (1) fundamental knowledge in designing simple structures; (2) the ability to calculate and arrange a simple structure that does not require an advanced mathematical foundation on the student's part; (3) familiarity with

various problems connected with operational technique, construction machinery and its application, safety and fire prevention technique, and also familiarity with fundamental knowledge of operational organization and planning as well as the building of a frame structure.

The special courses of this department are: construction materials, architecture, construction machines, construction technique, standards for construction technique, estimation of costs, economical construction and plans for it, construction sites, steel girders and cement mixing, use of wood and steel, sanitary equipment, safety and fire prevention technique, etc.

(6) Heat, Gas Supply, and Ventilation

This department trains engineers who can design and install heating and ventilation equipment in various types of houses and can also plan and design a city heating project and a gas fuel supply project. We must be able to control indoor temperature in order to raise the people's working conditions, to make the temperature suit production technique and the workers' health. Only thus can we guarantee an increase in production and a constant increase in living standard. On the other hand, in completing the above projects and other heat consuming projects, we must endeavor to cut down inefficient and wasteful heating and to fully utilize the heat in the fuel and in other precious chemicals. This is to widely supply heat and gas for our industries and cities. The main courses of this department include: technique courses: house construction, mechanics and electricity; special courses: heating and ventilation, which teaches how to design and install equipment regulating temperature, humidity, and air purity; fuel and boiler, which teaches how to

utilize the local fuel supply and how to plan and design a huge heat station; heat supply, which teaches how to supply heat for industry and the city, planning and designing "the center furnace for the whole city" and the heat supply network; gas supply, in which the student studies how to turn fuel into gas and to supply industry and residents with "the cheapest fuel."

From the above it is obvious that the final goal of this department is to utilize the fuel resources most economically and reasonably to produce heat for the welfare of the people. It is based on the total economy; therefore it is inseparable from the socialist system's concern for humanity and its comprehensive and long range planned economy. Consequently this technology was unnoticed in the old society and undeveloped in capitalist countries. This caused a shortage of experts in this field right after the success of China's revolution. Thus the situation was just like that in the Soviet Union right after the success of its revolution. After the liberation of the whole country, although with the help of Soviet technology we had completed some good heating and ventilation equipment, and thus greatly improved the health of the workers and output in some light industries, the shortage of experts in this field in China has not permitted us to make this technology serve our people to the degree it should. From now on, with the development of heating in cities and industries, with the height of the buildings increasing the service of this department to China's construction is bound to improve both in quality and quantity.

(7) Water Supply and Sewerage

In the process of China's socialist industrialization the water supply and sewerage problems of many factories and cities

must be solved. The goal of this department is to train the water supply and sewerage engineers needed for the fundamental construction of industries and cities, to undertake design and operation. The industrial consumption of water is great and demands a definite standard of water quality. How to select the source of water, construct a water supply structure, purify water, guarantee a constant water supply, suitable sewage and the purification of waste water so it may be used again to meet economical and sanitary conditions, are all the responsibilities of water supply and sewerage engineers. In the field of city construction, following the raising of the people's material living standard, water consumption will also rise continuously. To protect the health and welfare of the workers, water supply and sewerage projects for the city and workers' residential area should be carried out step by step. Suitable drainage of rainfall is also necessary for guaranteeing the normal progress of industrial production and the improvement of the workers' sanitary conditions. Therefore in selecting a factory site and planning cities, we should consider the source of the water supply and the drainage method. China has already started large scale economical construction. Due to the neglect of the water supply and sewerage projects in old China, there is a great shortage of cadres in this field. Consequently, training the new type of water supply and sewerage engineers is now one of the very important tasks in completing the industrialization of China.

The main subjects of this department are: in the field of water supply: the reservoir and equipment for getting water to the consumer, water purification structure, water transportation and water distribution structure, the industrial water supply system and industrial water management; in the field of sewerage: the

sewerage system for rain water, household waste and industrial waste treatment. To study the special courses of this department, one must first study such fundamental courses as: dynamics, hydraulics, structure mechanics, thermoengineering and electrical engineering; then one can complete the study of the design and planning of the water supply and sewerage and further study the mechanization and automation of water supply and sewerage projects. It is equally important to study the Soviet Union's advanced operational technique and organizational method for directing future field operations when the fundamental construction of the water supply and sewerage of the factory or the city is proceeding.

(8) Water Supply and Sewerage (Short course)

The aim of this short course is to train higher technicians in (1) design ability in the field of simple construction projects dealing with factory and city water supply and the sewerage system (including indoor sanitary equipment); (2) in familiarity with the technique of construction operation; having the fundamental knowledge of organizational operation, after graduation the students can work as direct supervisors of field operations.

(9) Railroad Construction

This department is to train railroad construction engineers, who after graduation can work in the design department, operation department, or task department.

Railroad construction is essential to China's industrial construction and is important in the exchange of rural and urban goods and in transportation. To meet the great need of the various railroad construction experts, this department is further divided into 4 special courses:

(1) Planning and construction of the railroad line: this course trains engineers to undertake new railroad surveying, planning, and building.

(2) Railroad lines and tracks: this course trains engineers to undertake the construction, planning, maintenance, and reconstruction of the railroad line.

(3) Railroad building: this course trains engineers to undertake the planning and building of railroad terminals and houses.

(4) Railroad water supply and sewerage: this course trains engineers to undertake the planning and construction of railroad water supply and sewerage projects.

Besides the fundamental courses, the general technical courses of this department include: surveying, engineering drafting, theoretical mechanics, engineering geology, structure mechanics, steel and cement, steel structure, timber structure, building technique, etc. Special courses are railroad line setting and planning, railroad construction, railroad line construction, railroad line operation, railroad houses, railroad water supply and sewerage, channel project, bridge project, etc.

To train higher technicians this department also offers 3 special short courses: railroad planning, railroad line operation, and track operation.

(10) The Highway and the City Road

This department aims to train road engineers to undertake the planning, surveying, building and maintaining and operational and organizational planning and other tasks involved in the construction of medium complex bridges and other constructions on the highway and on city roads.

Highway construction plays an important role in the national people's economical construction, in cultural interchange and defense; and further constitutes an important link in the communication and transportation involved in building a socialist society.

The city road is important in city construction as well as for the people's life, culture, and hygiene. It is as important in the construction of the whole country.

Both the highway and the city road must be combined with bridge construction to insure integration in construction. Hence, besides a course on the highway, this department offers general courses in medium complex bridge planning and building. (This department also offers a short course.)

(11) Bridge and Tunnel

Bridge and tunnel are the big scale construction in building railroad (highway and city road). Generally speaking, they are used to cross rivers, and valleys (bridge) and to go through high mountains and river beds (tunnel) to connect lines and facilitate communication.

In the gradual realization of China's national socialist industrialization communication and transportation should be developed correspondingly. Bridges and tunnels are often the control point of easy connection of railroad (highway and city road). Therefore building bridges and tunnels greatly affects communication and transportation. It also plays an important role in defense and in the transportation and prosperity of the city.

This department trains bridge and tunnel engineers, who can master the fundamental theory and advanced technology of the bridge

and tunnel and are able to undertake the planning, design, and construction works related to the bridge and tunnel.

The bridge and the tunnel are complex structures. A bridge and tunnel engineer must have a fundamental knowledge of mathematics, physics, and chemistry; special theoretical knowledge in theoretical mechanics, hydraulics, soil mechanics, etc; and special technical knowledge in structure design, bridge, bridge construction, tunnel engineering, etc. Besides, he must also know engineering geology, engineering materials, mechanical engineering, electrical engineering and technique in surveying, drafting, and operation.

This department has 2 goals. One is to train engineers to serve in the railroad; therefore the courses in this field are closely integrated with courses in railroad construction department. The other is to train engineers to serve in the highway and city road field; thus the courses in this field are closely integrated with courses in the highway and city road department.

(12) The Hydraulic Construction of River Structures and the Hydraulic Power Station

The department concerned with the construction of hydraulic structures on rivers and with the hydraulic power station trains hydraulic engineers for the design and operation of hydraulic structures. After graduation they will (1) design the arrangement of various hydraulic centers for the river (current control, water production, power station, navigation, river control and integrated centers).

(2) design various hydraulic structures formed by the hydraulic centers (dam, drainage structure, plants of the hydraulic power station, shipyards, incoming water gates, constructions and maintenance of the river beds, etc) and the main water distribution networks (main distribution line, reservoirs, piping, tunnel, and connector structures). These structures can be built up with cements, steel and cements, or steels and woods.

(3) design and do the calculations for the hydraulic power station, inland navigation, the development plan for soil conservation and improvement, engineering arrangement and special hydraulic structure.

(4) construct the various hydraulic structures mentioned above with the most advanced technology. In school they must master modern construction mechanics, construction operation technique, construction organization and planning, and safety and fire prevention technique, etc.

Most of the graduate engineers of this department work in the design section, undertaking the design and arrangement of hydraulic structure, planning operational and organizational work. They can also undertake technical supervision in the construction operation section. Of course work in this field should be primarily undertaken by graduate engineers from the following departments: the water utilization department, the department for the improvement of hydraulic soil, the navigation department, etc.

(13) Hydraulic Construction (Short course)

This short course trains higher technicians in hydraulic engineering. Their main task is to build structures for comprehensive use in rivers; including dikes, watergates, hydraulic power stations, dams, tunnels, etc. In the past 4 years, China has

achieved glorious successes in this field. The greater projects like the Fo-Tze-Ling Dam and the Pai-Sha Dam of the Hui River; the Chi-Shui Dam, and San-Ho Dam of the Jun River; the Kuna-Ting Dam of the Jung-Ting River; the Ta-Huo-Fung Dam of the Hun River; and the Branching project of the middle stream of the Yang-Tze River, etc, all belong to this category and fall within the scope of this short course.

In addition to the following general courses such as politics, athletics and mathematics, etc, the main courses also include the following basic technical courses: drafting, engineering mechanics, electrical engineering and hydrology, hydraulics, steel and cement structure, construction operation and construction mechanics and hydraulic structure.

(14) Hydraulic Construction in the River and Harbor

China has 12,000 km of coast line and several tens of thousands of km of rivers. With the progress of socialist industrialization, the task of communication and transportation, especially navigation which offers the cheapest freightage, increases day by day. This is necessary to meet requirements for the interchange of urban and rural goods and to increase this interchange it is also necessary for lowering costs and for creating great wealth for China. At the same time, harbor and transportation are directly vital for our defense.

The goal of this department is to train technical cadres capable of mastering advanced engineering technique and scientific operational methods and organizational planning so that they may design, plan, and construct transportation centers and navigation systems for river route and harbor construction. They must also be able to undertake scientific research.

Besides the general civil engineering courses (or hydraulic courses) this department offers these special courses: harbor and port layout, the inland water road, water project layout, route, up and down stream and wave theory, etc.

(15) Improvement of Soil Water Control

The goal of this department is to train hydraulic engineers whose tasks are to repair and maintain dams, dikes, canals, and other water constructions, water conservation, water transportation and water distribution for regulating the water in the soil to make the soil yield large crops.

When natural water does not meet the need of the farm, the shortage must be made up by artificial means -- this is called irrigation. When natural water exceeds farm needs, it must be drained artificially; this is called drainage. Students of this department, after graduation, will undertake mainly the following: (1) survey; (2) planning; (3) design; (4) operation; and (5) management of irrigation and drainage projects.

Improvement of soil water control incorporated with other related measures can continuously increase soil fertility, gradually reduce the natural phenomena harmful to human beings such as draught, flood and storm; constantly increasing farm products and make natural phenomena develop in a direction beneficial to mankind.

In China natural phenomena harmful to mankind, such as draught, flood, and storm are still quite serious. Constant improvement of farm products is essential for socialist construction in China. Improvement of soil water control will play a great role in achieving this task.

(16) Improvement of Soil Water Control (Short course)

The main courses in this short course are irrigation engineering and drainage engineering.

The goal of irrigation and drainage is to regulate the water content of the soil, to make it suit the needs of the farm, and to constantly improve soil fertility in order to guarantee a high and stable farm output.

Thousands and thousands of agricultural production cooperatives and state farms must be established during the period of our national socialist construction and socialist reformation. After graduation students of this short course will undertake the construction of maintenance works on the irrigation projects and drainage projects in these agricultural production cooperatives and state farms.

XIV. Transportation

(1) Railroad Management

This department's goal is to train railroad transportation engineers. Transportation is important in our people's economy. To develop heavy industry communication and transportation must also be developed. Railroad transportation plays a decisive role in the whole transportation enterprise. Following the constant development of the people's economy, and the constant increase in the demand for railroad transportation facilities, the railroad transportation network must expand day by day, while new technique and equipment must also be strengthened day by day. From research into the application of railroad transportation technique and equipment and the result of the advanced experience of the train time

schedule organization, the department of railroad management sets up the most reasonable, the most efficient and the safest railroad time schedule organization and the best method for the comprehensive application of railroad technique and equipment; regulates the necessary transportation capacity to meet the national demand for transportation; and determines the transportation needs of the new technique and equipment.

After graduation students from this department should be able to undertake organizational work on train time schedules, the planning of the station and control room and organizational work on cargo transportation. Besides the basic courses, this department also offers the following courses: train time schedule organization, the station and control room, business management, locomotives and cars, the railroad network and road maintenance, signal and communication, transportation economics, railroad design and improvement, estimation and analysis of railroad transportation cost, etc.

(2) Railroad Transportation Mechanics

This department's goal is to train various mechanical engineers in railroad transportation. At present, this department is tentatively divided into 2 specialized fields: steam locomotives and cars.

Experts trained by this department will undertake the following: technical direction of the checking, repairing, and operation of the locomotive and cars; research, improvement, design, and experiments on locomotives and cars; organization, management, and design of the repair plant and locomotive shop or car shop. Students should study the following to prepare themselves for the

above tasks:

(1) Structure, theory, computation, and selection of locomotives or cars;

(2) Methods and systems of checking and repairing locomotives or cars;

(3) Methods and systems of using locomotives or cars;

(4) Regulations and arrangement of the locomotive shop or car shop and locomotive and car repair plant; they must also have a general knowledge of the railroad, safety and fire prevention technique, and industrial economics.

(3) Automatic Remote Control and Railroad Transportation and Communication

This department's goal is to train railroad transportation, radio communication, and signal engineers. They must have the design, installation, repair and improving production technique abilities needed in railroad radio communication and signal projects. The junior and senior students of this department can specialize in either automatic remote control or railroad radio communication.

In railroad radio communication work it is important to rapidly and instantly communicate orders and conditions on railroad transportation in order to guarantee the close union of the various departments of railroad transportation and the continuous operation of railroad transportation work. In railroad signal work it is important to guarantee the moving safety of the trains and to give correct direction to the moving course of the train. Consequently, railroad radio communication and signal work is a very important field in guaranteeing and improving the efficiency of railroad transportation.

This department offers the following political science courses: the revolutionary history of China, fundamentals of Marxism Leninism, etc; the following basic courses: Russian, advanced mathematics, physics, theoretical mechanics, engineering drafting, metal engineering, etc; the following basic technical courses: principles of electrical engineering, the vacuum tube, and circuits, etc. The specialized course in automatic remote control offers the following courses: the signal, the mechanical centralized control, the semi-automatic valve, the automatic valve, the centralized adaptor, elevated ramp, the train depot, chain installation, etc. The specialized course on railroad transportation communication offers the following courses: the radio wave telephone, wiring engineering, the long distance test, cable and telephone, railroad special communication, radio communication, etc.

Students who want to enroll in this department must be healthy. The color blind, or those with ear disease or rheumatism are not suited for this department.

(4) Railroad Transportation Dynamics

This department aims to train dynamic engineers to undertake the design, construction, and operation of dynamic equipment related to the railroad. The main courses of this department are: (1) thermodynamic equipment, including heat equipment and heat supply equipment in the fuel power station; (2) the electric parts of the power station and transforming station, including short circuit calculation, electric instrument design, relay protection and automation; (3) the distribution network and the high voltage transmission network, including the design of the electric wire network, high voltage

insulation and high voltage technique; (4) electric transmission and automation.

Engineers trained by this department can work in the following areas: (1) the fuel power generating plant; (2) transmitting and distributing sections in the electric railroad; (3) the dynamic section of the railroad plant; (4) the design and operation sections of the railroad.

(5) Electric Transportation

This department aims to train electric railroad engineers to design, construct and operate the electric railroad and the underground railroad. The main courses of this department are: (1) the electric locomotive and motor car; (2) the traction transforming station, the power supply network and connecting network of the electric railroad; (3) traction calculation and power supply design of the electric railroads; (4) electric railroad automation; (5) planning, organizing and managing the electric railroad.

Engineers trained by this department can participate in the work of the following sections: (1) the manufacture or repair section of the electric locomotive; (2) the electric section in the electric railroad; (3) power transmission, transforming, and distribution sections of the electric railroad; (4) design and operation sections of the railroad.

(6) The Railroad Transportation Business

This department trains business managers in railroad transportation. The students must have the training of an engineer; they must be able to master the following fundamental theories and techniques; in actual work they must be able to solve independently

the problems that arise: (1) reasonably use all technical equipment used in the railroad transportation business to organize the business affairs of railroad transportation (including loading and unloading, the warehouse, a yard for storage of freight, accident compensation, transportation rate, transportation regulations, agreement, transportation business bureau, etc); (2) punctual and satisfactory delivery of goods to the various people's economical departments; (3) from the analysis of national economical policy and transportation cost, regulate the railroad transportation rate; (4) on the basis of people's economical planning, master the flow and source of goods in order to carry out the transportation plan.

The importance of the railroad transportation business lies in developing the connection between railroads and individuals, in accelerating turnover, cutting down transportation cost, in fulfilling and overfulfilling China's national cargo transportation plan so as to serve the industrialization of China along socialist lines and for socialist reformation.

Besides the fundamental courses, this department also offers the following courses: the general theory of the railroad, the locomotive and cars, the train time schedule, railroad business management, railroad cargo, railroad mechanical loading and unloading, railroad transportation rate, calculation and analysis of railroad transportation cost, railroad business facilities, refrigeration and transportation, etc.

(7) River Transportation Management

The course in river transportation management aims to fully develop the potentiality of the river ships and ports in Chinese national socialist construction, to utilize natural rivers and

artificial waterways to constantly raise the transportation capacity of the inner river ships and the loading capacity of the ships. This will promote inter-rural and urban assistance and the exchange of goods.

This department aims to train river transportation engineers for organizing and directing river transportation. After graduation they must have the necessary basis in engineering technique and economical theory so that they may undertake projects in transportation, business, organization, planning, etc, in the river and port sections in the communications department.

The basic courses of this department are: electrical engineering, the theory and construction of the ship, the dynamic equipment of the ship, crane transportation machines, river transportation economics, etc. The special courses of this department are: ship fleet organization, the organization and mechanization of loading and unloading, business management and cargo, etc.

(8) Ocean Transportation Management

This department aims to train ocean transportation managing engineers for organizing and directing ship transportation, port loading and unloading, and the application of their auxiliary facilities. They are responsible for accurately organizing, adjusting, planning and managing ship, port and their auxiliary facilities. Therefore, not only must they master scientific technical theory on the ship and port, they must also on this foundation study the advanced Soviet ocean transportation organization plan, port organization and mechanization, and business management, and science related to ocean transportation technique, economy, and direction.

China has a long coast line and various kinds of good ports. Ocean transportation is important in communication enterprises. The task of the ocean transportation department is to discover the potentiality of the ship and the port, to expand the shipping capacity of the port, to raise the transportation efficiency of the ship and to lower the cost, so as to promote international communication, and develop the people's economy. Organizational and directional technique as well as business knowledge are important for accomplishing the above task. Therefore, this department, in training ocean transportation management engineers for China, plays an important role in realizing the general line of the national transitional period and developing ocean transportation enterprises.

Besides the basic courses, this department also offers the following courses: theoretical mechanics, projection geometry and drafting, metal and ship materials, mechanics of materials, mechanical theory and mechanical parts, fundamentals of operation, ship principle and ship repairing, hydraulics and hydrodynamics, electrical engineering, principles of turbines and thermodynamics, crane transporting machines. The special courses on the waterway and the port contain the following: ocean transportation organization and planning, loading and unloading and mechanization, business management and goods. The auxiliary courses are: transportation, transportation statistics, technical economical investigation, ocean economics, accounting and economical activity analysis, ocean safety and fire prevention, etc.

(9) Ship Repairing

The goal of this department is to train ship repairing mechanical engineers. After graduation, their chief task is repair work in the ship repair yard. Therefore they must have the scientific

theoretical basis for work in a comparatively large ship repair yard workshop. They must also be able to pursue research work independently. Furthermore, they must also possess the practical experience of the workshop technician as well; this will make it possible for them to repair ship dynamic installations, auxiliary machines, electric equipment and ship body repair work to maintain the normality of the ship.

Ship transportation is an important link in communication and transportation. Consequently mechanical engineers engaged in repairing ships play an important role in developing the potentiality of the ship repair yard and absorb in good time advanced experience for improving the equipment and the regulations of technical operations and for raising working efficiency and shortening the time required for repair. This makes it possible for the ship to transport goods ahead of schedule.

Besides the fundamental courses the chief courses of this department are: drawing geometry, mechanical drafting, theoretical mechanics, mechanics of materials, mechanical principles, mechanical parts, hydraulics, thermodynamics, electrical engineering, metallurgy and processing metals at high temperatures, the engineering of ship materials, cold cutting processing, welding, the ship boiler, ship dynamic installations (various ship engines), ship auxiliary machines and refrigeration equipment, ship principles, ship construction and the ship propeller, electrical equipment on the ship, the manufacture of ship machinery and mechanical repairing, repairing the various systems of the ship, planning and organizing ship repair and ship manufacture, etc.

(10) Ship Operation

Ship operation is essential for ocean transportation. In the exchange of goods inside and outside the country, and in guaranteeing the realization of socialist industrialization it plays an important role. A ship can carry a heavy load for a long distance at a low cost. It also has advantages over other transportation facilities. China is endowed with a long and excellent coast line; thus ocean transportation is an essential link in the transitional period of socialist construction.

The goal of this department is to train ocean ship navigation engineers. They must know all the scientific theories connected with ship navigation. They are given the responsibility of independently and accurately navigating the ship under any conditions, directing the administration of the ship, maintaining the ship, protecting the cargo, and developing the potentiality of the ship to raise transportation efficiency. Therefore, they must not only be familiar with ocean and coastal sailing technique, but must also have a certain amount of knowledge in the transportation business.

Besides the fundamental courses, this department offers the following courses: drawing geometry, theoretical mechanics, mechanics of materials, hydraulics, principles of electrical engineering and mechanical engineering, radio engineering, ocean transportation economics. It also offers the following special technical courses: fundamentals of turbines, fundamentals of ship making, ocean navigation, ocean navigation astronomy, meteorology, oceanography, techniques relating to the ship, electric navigating apparatus, loading and unloading, the sea port, sea law, differential theory and magnetic differential, safety and fire prevention, etc.

To adjust to ocean work, students of this department must have a firm will, an enduring spirit and a healthy body. The near-sighted, color-blind, flat-footed, or those with lingering diseases or stomach diseases are not eligible for this department.

(11) Automobile Maintenance and Repair (Short course)

The goal of this short course is to train higher technicians for automobile maintenance and repair. After 2 years of study they are expected to be able to undertake the following: (1) checking, repair, and maintenance of the automobile, (2) replacement of the most often used auto parts, (3) planning and management of the auto repair plant.

In Chinese socialist construction and socialist reformation transportation enterprises will play a very important role. Not only do they promote the interchange of goods between rural and urban areas, accelerate the flow of goods, transport the essential goods for industrial construction and are thus very important for the Chinese people's economy; they are also very important for defense. To guarantee the satisfaction of the demands of the Chinese people's economy and defense for automobile transportation, besides raising the automobile production level and technical level, to strengthen automobile maintenance, checking and repair to guarantee long term normal usage and increasing the time a vehicle can be used are especially important.

Besides political courses, fundamental courses, and fundamental technical courses, this department also offers the following main courses: automobile structure, principles of the automobile motor, electrical equipment in the automobile, the manufacture of

auto parts, auto repair, auto operation, industrial organization and planning, etc.

Students wishing to enroll in this department must have a good foundation in the natural sciences and must be in good health. Those very near-sighted or color-blind do not qualify for this department.

XV. Telecommunication

(1) Cable and Telephone Communication (Short course)

This department trains telecommunication engineers versed in the fundamental principles of wire engineering who understand design principles and can master practical techniques. Their tasks cover a comparatively wide area including the city telephone, the national long distance telephone and telegram, and the telephone and telegram equipment in all the factories and mines. Students enrolled in this department must have a good foundation in mathematics, physics, and chemistry. Besides the general sciences and general technical courses, they must also study the following technical courses: the electronic circuit, telephone communication transmission, etc, and the following special courses: the city telephone, the long distance telegram wire engineering, etc. In the senior year this department is further divided into 2 specialized fields: city telephone and long distance telecommunication. (1) City telephone: this specialized field offers the following courses: the automatic telephone, cable design, the design of the telephone bureau and its mechanical maintenance and installation, etc. These courses enable the students to design the cable, and to design, install, operate, and maintain the telephone.

(2) Long distance telecommunication: this specialized course offers the following courses: telecommunication transmission, radiowave telephone exchange equipment, long distance telecommunication installation and maintenance, etc, to enable the students to operate the long distance telephone, telegram and cable designing, installation, operation and maintenance.

(2) Radio Communication and Broadcast (Short course)

The goal of this department is to train radio communication and broadcast engineers to maintain, design, and operate the equipment and to do scientific research.

The main courses of this short course are: fundamentals of electrical engineering, fundamentals of radio, the vacuum tube and gas tube, the step up transformer and adjustment equipment, antenna, radio transmitter equipment, radio receiver equipment, etc. In the senior year this department is further divided into 2 special courses -- radio communication and radio broadcasting. Students in the special course on radio communication must study microwave engineering, wireless telegraphy, etc. Radio broadcast special course students must study acoustics engineering.

This department requires students to have a solid foundation in mathematics and physics so that they will be better prepared for their studies.

XVI. Special Industry (Temporarily Not Available)

TEACHER'S COLLEGE

Advanced schools for teachers are of 2 types: the teacher's college (teacher's university) and the teacher's professional school.

The task of the advanced teacher's school proceeds in the spirit found in the general policy adopted in the national transitional period; it uses the method of applying theory to practice in training in the middle school teachers in basic knowledge, in the Marxist-Leninist viewpoint, in Communist morality, in an advanced cultural and scientific standard, in specialized knowledge, and in teaching techniques so that they may whole-heartedly help to educate the people. The teacher's college requires 4 years of training of those who are to become senior middle school teachers; for the junior middle school teachers, or its equivalent, the teacher's professional school requires 2 years of training.

"China has already entered the period of planned economical construction. According to the general tasks and the general policy of Chinese construction during the transitional period and according to the fundamental tasks of the First Five-Year construction plan, the basic task of education in China is to train construction experts and to vigorously and gradually raise the people's cultural level. Education for advanced teacher's is the key to a better and well-developed secondary education; and a better and well-developed secondary education is important for training constructive experts for China and for raising the people's cultural level. The number and quality of the advanced teacher's schools directly affect secondary education, affect the training of the new youth in China and indirectly affect the development and betterment of advanced education. Thus the plans for training construction experts for China and the accomplishment of Chinese national construction plans is affected." (The directive for improving and developing education in the advanced teacher's college issued by the state council of the Central People's Government.) From this we can see the role

of advanced teacher training in the educational construction of China. Just like heavy industry in industrial construction and the lathe in machinery, advanced teacher training is the basis for the educational construction of China and the central link in the entire educational enterprise. Those who desire to enroll in the advanced teacher's school must fully understand the importance of teacher's education in Chinese national construction. Only then can they conscientiously study and honestly work for the education of the people.

The advanced teacher's school, besides offering specialized courses, also offers courses in political theory and in the science of education. Political theory courses include Chinese revolutionary history, fundamentals of Marxism-Leninism, political economics, dialectical materialism and historical materialism. The teachers of our people must have a thorough grounding in Marxism-Leninism and in Mao Tze-Tung's ideas. Only then can they train the youth to be self conscious, positive builders of socialist society and communist society. The courses compulsory for the science of education are: psychology, education, educational history, various teaching methods, teaching training, etc. People's teachers must systematically study educational theory and master the scientific knowledge and technique of education so that they may be able to undertake teaching assignments and train the youth.

The teacher's college has the following departments: education (containing 2 specialized departments: school education and preschool education), political education, Chinese language, Russian language, history, mathematics, physics, chemistry, biology, geography, athletics, music, fine arts, drawing and blueprinting,

etc, to separately train teachers for the various courses offered in the senior middle school. The school offering a short course for teachers includes the following courses: political education, Chinese language, Russian language, history, mathematics, physics, chemistry, biology, geography, athletics, music, fine arts, crafts, etc, to separately train teachers for the various courses of the junior middle school. All the teacher's colleges have a 2-year short course. Its task is similar to that of the school offering a short course for teachers.

In the last 4 years, because of the concern and emphasis of the party and the people's government, the advanced teacher's school has witnessed rapid reconstruction and great development. China now has 33 advanced teacher's schools (including the teacher's school of Singkiang National College, the teacher's college of Yen Bien University, but excluding the 6 new teacher's colleges for 1954). The present enrollment has increased 117.27% over the record enrollment of old China (1946). In the last 4 years more than 20,000 students have graduated from these teacher's colleges and partly met the demand for middle school teachers. However, the present scale of advanced teacher's school does not at all meet the demands of middle school educational development. It must be vigorously developed in the next few years. At the same time the advanced teacher's school has scored definite achievements in a series of reforms as, for example, in the reindoctrination of teachers, the adjustment of departments, and in the teaching method (mainly to study the advanced experience of the Soviet Union). These achievements paved the foundation for advanced teacher's education and paved the way for future development. In 1954 in accordance with the policy of "planned, prepared, and vigorous development on the

foundation of the reconstruction and strengthening of advanced teacher's education as it is now and on the basis of needs and possibilities," advanced teacher education will be further developed and elevated.

I. Education

The education department offers 2 special courses: school education and preschool education.

The task of the special course in school education is to train education and psychology teachers. Besides the general compulsory courses, the main courses of this special course are: general psychology, child psychology, education, educational history, teaching methods in the elementary school, school hygiene, human anatomy and physiology, logic, methods for teaching education, methods for teaching psychology, field observation for teaching, field training for teaching, etc.

The task of the preschool education course is to train education and psychology teachers for preschool children. Besides the general compulsory courses, the main courses of this department are: education, preschool education, general psychology, psychology of the preschool child, history of education, human anatomy and physiology, preschool hygiene, organization and direction of preschool education, literature for children, the language of the child, natural science in the kindergarten, active games and athletics in the kindergarten, kindergarten arts, kindergarten music and singing, and methods of teaching in the kindergarten, etc.

II. Political Education

The task of the department of political education is to train teachers to teach middle school politics. Besides the general compulsory courses, the main courses of this department are: history of the Chinese revolution, fundamentals of Marxism-Leninism, political economics, dialectical materialism and historical materialism, selective readings from Marx and Lenin, fundamentals of the country and law of China, history of China, world history, etc.

III. Chinese language

The task of this department is to train the middle school Chinese teacher. Besides the general compulsory courses, the special courses of this department are divided into 2 sections: language and literature. The courses are: general linguistic theory, Chinese language (including ancient Chinese and modern Chinese), the general theory of literature, Chinese literature (from the Chin dynasty to the present), foreign literature, literature for children, methods of teaching the Chinese language, methods of teaching literature, etc.

IV. Russian

The task of this department is to train middle school Russian teachers. Besides the nonselective courses the main courses of this department are: Russian (including reading, grammer, translation, phonetics, grammer research), Russian literature, methods of teaching Russian, modern Chinese, modern Chinese literature, Russian history, etc.

V. History

The task of this department is to train middle school history teachers. Besides the nonselective courses, the main courses of this department are: ancient history of the world, mediaeval history of the world, recent and modern history of the world, selections of the important documents of Chinese history, world literature and Chinese literature, methods of teaching history, etc.

VI. Mathematics

The task of this department is to train middle school mathematics teachers. Besides the nonselective courses, the main courses of this department are: general physics, theoretical dynamics, analytical geometry, mathematical analysis, advanced algebra, modern geometry, fundamentals of geometry, function of complex variables, integral number theory, drawing, review and study of elementary mathematics, methods of teaching mathematics, etc.

VII. Physics

The task of this department is to train middle school physics teachers. Besides the nonselective courses, the main courses of this department are: general physics, theoretical dynamics, theoretical physics, laboratory course in advanced physics, mathematical analysis, analytical geometry and algebra, astronomy, electrical engineering and radio technique, drawing, physics teaching methods, laboratory techniques in middle school physics courses, etc.

VIII. Chemistry

The task of this department is to train middle school chemistry teachers. Besides the nonselective courses the main courses of this department are: inorganic chemistry, organic chemistry, analytical

chemistry, physical chemistry, biochemistry, agricultural chemistry, industrial chemistry, periodic table of the elements, identification of organic compounds, general physics, mathematics, methods of teaching chemistry, etc.

IX. Biology

The task of this department is to train middle school biology teachers. Besides the nonselective courses, the main courses of this department are: Michurin biological theory, botany, zoology, the organism and embryology, human anatomy, human and animal physiology, plant physiology and microbiology, Darwinism, fundamental agriculture, fundamental chemistry, organic chemistry, biochemistry, methods of teaching biology, etc.

X. Geography

The tasks of this department are to train middle school geography teachers (also middle school mineralogy teachers). Besides the nonselective courses, the main courses of this department are: surveying, geology, physical geography, soil geography, plant geography, continental natural geography, Chinese natural geography, Chinese economic geography, foreign economical political geography, geography teaching methods, etc.

XI. Athletics

The task of this department is to train middle school athletics teachers. Besides the nonselective courses, the main courses in this department are: human anatomy, human physiology, hygiene, athletics theory, athletics administration, physiology of exercise, judgment of contests, emergency aid, methods of teaching athletics and hygiene, and various technical courses.

XII. Music

The task of this department is to train middle school music teachers (and teachers for extracurricular activities). Besides the nonselective courses, the main courses of this department are: the general theory of the arts, music theory, musical masterpieces, the voice and the chorus, instruments, methods of teaching music, supervision of recreation, etc.

XIII. Fine Arts

The task of this department is to train drawing teachers for the middle schools. Besides the nonselective courses, the main courses of this department are: general theory of art, sketching, painting, water color painting, methods of teaching drawing, etc.

XIV. Drawing and Map Making

The task of this department is to train middle school drawing and map making teachers. Besides the nonselective courses, the main courses of this department are: general theory of the arts, map making, painting, sketching, water color painting, drawing and methods of teaching map making, etc.

Most of the advanced teacher's colleges offer one special department. But a very few (mainly the minority colleges) have 2 special departments: e.g., a history-geography department, a mathematics-physics department, a literature-history department, a biology-chemistry department, an arts department, etc. Besides, minority colleges like the teacher's college of Yen-Pien University and the teacher's school of Sinkiang Minority College have minority language departments.

HYGIENE AND HEALTH EDUCATION

The task of the hygiene department is to guarantee the health of all the Chinese people. During China's transitional period from the new Democratic society to the socialist society projects in hygiene should primarily serve our national socialist industrialization and should first serve agricultural cooperation and collectivization in the rural areas. With the growing development of industry more and more workers are going to undertake various kinds of industrial production under various special conditions. Therefore a great many hygiene workers are needed to serve them. However, at present there are but a few of these workers, far from enough to meet the objective demands. Consequently, to meet the needs of Chinese socialist construction we must train a great many of the new type medical, hygiene cadres who are healthy, virtuous and talented.

China had established medical laboratories as far back as 1903, but due to the constant neglect of the health of the Chinese people by the feudal class and the Nationalist reactionary government, they only trained very few hygiene workers. Most of these were concentrated in the big cities to serve the minority ruling class.

After the establishment of the new China, for the past 4 years, the central people's government undertook preliminary adjustment and development of all China's advanced medical schools. At present enrollment in the medical schools is twice that before liberation. Furthermore, all the medical schools have already undertaken some reforms in teaching, e.g., teaching methods have been revised, courses have been shortened and refined, the material

taught has been improved, etc. The courses of all the departments have already started according to plan. After the ideological reformation teachers began by criticizing the thinking and wrong viewpoints of the capitalist class; thus they generally raised the ideological level, and their enthusiasm for studying the advanced experience of the Soviet Union also greatly increased. In 1953 the teachers took the short course in Russian and thus took the first step in mastering the tool necessary for studying the Soviet Union. At present many schools have already begun the systematic study of the Pavlov theory, and have organized the translation of Russian teaching materials. Thus they have laid a good foundation for the study of the advanced experience of the Soviet Union to undertake reform in teaching.

Due to the rapid development, although all the colleges and schools have already made adjustments and have developed, teachers are still lacking, facilities and housing are still inadequate. Some schools must adjust and develop still more. Reformation in teaching has just begun. It demands that there be further concentration and vigorous training of new teachers; it requires raising the standard of the present teachers so that scientific research may be developed systematically so that the number of teachers may be increased and their quality raised.

Under the correct direction of the central people's government and chairman Mao, with the efforts of the faculties of all China's medical schools and the assistance of Soviet experts all these problems will certainly be solved one by one.

There are only 30 medical colleges and 2 independent medical schools in all China. These colleges have established the following

departments as a first step: a department of clinic medicine, a department of public health, a department of oral hygiene, and a department of pharmacology. The task of these departments is to train healthy and patriotic health experts, who have reached a definite level of thinking in Marxism-Leninism and can master advanced scientific technique so they may serve socialist construction.

Because their work is directly related to the health of all our people, especially the workers, all the health workers must be enthusiastic in the service of the people, industrious in raising the people's health standard, and highly devoted to working for making sure that the tasks stipulated by the general policy of China will be realized.

I. Clinics

Medical science studies the struggle of the human body against nature during its conception and growth and studies the medical technique required for the ultimate cure of diseases so that health may be improved, the body strengthened, and life prolonged. This department trains experts who can master clinical, teaching, and research work in medicine.

Besides courses in Marxism-Leninism, this department also offers the following courses in fundamental knowledge: physics, chemistry, biology; the following courses in fundamental medical knowledge: anatomy, physiology, biochemistry, bacteriology, pathology, principles of pharmacology, etc; and the following clinical courses: internal medicine, surgery, pediatrics, obstetrics and gynecology, skin and venereal diseases, ophthalmology, ear, eye, and throat, etc.

Studies in this department last 5 years. Those who have completed the 5-year course are considered qualified physicians.

Students who want to enroll in this department should have a good foundation in physics, chemistry, biology, and mathematics. Besides the general health requirements, students must also be free from color-blindness and hearing difficulties.

II. Public Health

Public health is a preventive medical science which studies the influence of natural and social factors on the human body and humanity at large. Based on the law of the mutual reaction of circumstances and organic development, it studies and formulates ways and means of preventing or eliminating harmful elements in the outer surroundings. It also utilizes various factors beneficial to the human body in order to protect health, strengthen the physical constitution, and prolong human life.

To carry out the policy of thoroughly protecting the people's health and because of its unending efforts to prevent disease, this department trains public health physicians to undertake practical, research, and teaching projects in order to protect the people's health and to strengthen their physical constitution. During the transitional period of the country, this department is chiefly concerned with protecting the health of the workers, improving working conditions, studying and preventing all kinds of occupational diseases, industrial poisoning and all kinds of industrial disasters so that production may be increased. At the same time this department also devotes itself to the study and prevention of the various kinds of diseases and disasters that most damage the people's health.

Besides the courses in Marxism-Leninism, this department also offers the following courses in general knowledge: physics, chemistry, biology, etc; the following courses in basic medical knowledge: anatomy, physiology, pathology, biochemistry, bacteriology theory, pharmacology; the following clinical courses: internal medicine, surgery, pediatrics, obstetrics and gynecology, etc; and the following public health courses: current pathology, environment and health, nutrition and health, school health, labor health, health organization, and general hygiene.

This department offers a 4-year course.

Students who want to enroll in this department must have a good foundation in the natural sciences (especially physics and chemistry) and in the social sciences.

III. Oral and Dental Surgery

About a hundred years ago oral surgery had appeared in the medical world in the form of dental surgery. After a hundred years of development it includes much more than formerly. Recently the new biological theories and the Pavlov theories in the Soviet Union stress more fully the important relation oral diseases have to the whole body; thus they make oral surgery play an important part in the struggle for preserving human health against the forces of nature.

The lack of emphasis on oral surgery in the old society resulted in the training of very few experts in this field. From now on to guarantee the health of the Chinese people, we must train enough oral surgeons. This department trains experts who can work in the clinic and can teach and do research in oral surgery.

Besides courses in Marxism-Leninism, this department also offers special courses in fundamental knowledge, fundamental medical knowledge, clinical knowledge and oral surgery like the histology of the mouth, pathology, tooth anatomy, the correction of dental deformations, oral surgery, oral pathology and dental public health, etc.

This department offers a 4-year course.

IV. Pharmacology

Pharmacology is an integrated practical science that studies the production, characteristics, usages and functions of medicine to the human body. The quality of the medicine directly affects the health of the mass of the Chinese people, therefore, in the wake of the development of people's health projects, the growth of clinics, we must meet the needs of the Chinese people with good medicines. This department trains experts versed in systematic medical theories, experts with a fundamental mastery of knowledge in the production, identification, examination of quality and pharmaceutical function of the medicines.

Besides the courses in Marxism-Leninism this department also offers courses in fundamental pharmaceutical knowledge; in chemistry: organic chemistry, inorganic chemistry, analytical chemistry, biochemistry, theoretical chemistry, and medical chemistry; in medicine: anatomy, physiology, microbiology, public health, etc; in pharmacy: pharmaceutical botany, pharmacology, pharmaceutical chemistry, pharmaceutical principles, medicine identification, etc.

This department offers a 4-year course.

Students who want to enroll in this department must have a good foundation in mathematics, physics, and chemistry. With regard to their health requirements, besides the general requirements, they must not be color-blind or have color-weakness.

AGRICULTURE AND FORESTRY

The basic task of advanced agricultural education is to train advanced agricultural construction experts to carry out the tasks of the transitional period in China so that the socialist reformation in agriculture and the raising of agricultural production may gradually be realized. This is indeed a difficult, yet glorious task.

The inter-relatedness and inseparability between the realization of the socialist reformation and the development of socialist industry makes it necessary to train various experts according to plan and needs to work for national socialist construction. However, some teachers and students at one time failed to recognize fully the position and relation between the various departments of our people's economy and the role of various experts in our national construction. In the last 2 or 3 years students have maintained incorrect viewpoints and adopted wrong decisions in emphasizing enrollment in technical fields to the neglect of enrollment in teacher's colleges, in departments for agriculture and forestry, and in other departments. After an extensive study of China's general policy last winter this incorrect viewpoint has begun to change. We must recognize correctly that more than 400 million people in the agricultural population have been positively and steadily proceeding toward cooperatives. The mechanized socialist state farms are also manifesting their excellence. To realize our

nationalist, socialist industrialization, to guarantee enough food for the people in the city and factory and all the workers, to guarantee enough industrial materials and various other kinds of agricultural products, many agricultural experts are needed to actively improve agricultural technique and develop agricultural production. This is an important guarantee for the progress of the people's economy and for its transition into socialist society.

Formerly some students who intended to enroll in the agricultural school preferred to major in plant production (e.g., agriculture, plant protection, etc) rather than major in livestock production (e.g., animal husbandry, veterinary science), thinking that to study animal husbandry and veterinary science is to lower oneself to the status of horses and oxen -- a great loss of face. Such a misconception was not only caused by the worthless ideas of the old society, but also by the misconception that animals are the dynamic power of agricultural production, the source of fertilizer, as well as an important source of food and industrial materials for the people. Some others preferred agriculture to forestry, thinking that since to major in forestry requires mountain climbing and ridge crossing and as therefore more exhausting. They simply failed to understand that because much wood is needed by the people and by national economical construction, and many higher technical experts are needed for logging and wood transportation, forestry management and administration.

At present in all China there are 29 independent agriculture and forestry colleges, 2 agriculture schools in the integrated universities, and 3 agriculture departments. They exist to meet the needs of agricultural construction and conditions in all the branches of advanced agriculture and forestry; they exist to fulfill the

objective of "adjusting and strengthening, emphasizing development, improving the quality of output and achieving steady progress." In these 34 units, there are 23 categories with a total of 162 departments. They are distributed thus: 5 such colleges in North China, one such college in Inner Mongolia, 4 such colleges and one such department in the Northeast, 3 such colleges and one such department in the Northwest, 8 such colleges and one such department in East China, 6 such colleges in Mid-South, 4 such colleges (including 2 under the integrated universities) in Southwest. Following the rapid development of Chinese national economical construction, the enrollment will continuously increase; the scope and facilities of the colleges will likewise expand step by step.

The general policy of our national transitional period and the general tasks it involves demand that agricultural construction catch up with the needs of Chinese socialist industrialization and that we send more young cadres to the agricultural fronts. Fellow students, China's needs require your help! Please be ready to devote all your strength to this new and glorious study task.

I. Agriculture

The goal of this department is to raise unit output by improving seed breeding, the quality of husbandry and its organization and all related factors. Its task is to train experts in agricultural production, to provide them with wide agricultural scientific knowledge and abilities in the theory and technique of husbandry, in the growth and breeding of crops and in directing full scale agricultural production. Their task, in turn, is to develop the agricultural cooperatives and to mechanize in order to meet the demands for food and industrial materials of Chinese socialist industrialization.

The main courses of this department are: general husbandry, plant growth, breeding, and selection. Its fundamental courses are: fundamental principles of Darwinism, Michurin genetics theory, Williams soil theory, plant physiology, meteorology, etc.

II. Fruits and Vegetables

This department emphasizes the production and supply of vegetables for the city and the mine areas and the improvement of the unit output and quality of fruits and vegetables.

The task of this department is to train experts who can master the theory and technique involved in growing, managing, and breeding fruits and vegetables. The courses it offers will develop vegetable production to guarantee a yearly balanced supply, and to develop fruit production to satisfy the growing daily needs of the people.

The special courses of this department are: growth of vegetables, growth of fruits, selection and breeding of fruits and vegetables, fruits and vegetable preservation and processing, etc.

The fundamental special courses are: Darwinism, Michurin genetics, plant physiology, soil, etc.

III. Gardening

The goal of this department is to train higher technical cadres to design and manage the city landscape, home grounds and parks.

The special courses of this department are: appreciation of trees, floriculture and gardening, horticulture art, landscape of city and residential areas, garden construction, building, design and drawing, etc.

The fundamental special courses are: botany, meteorology, soil, plant physiology, etc.

IV. Plant Protection

The goal of this department is to prevent and eliminate plant pests in order to guarantee the improvement of unit output in agricultural production.

Many harmful insects and germs damage various kinds of crops and their products, diminish agricultural production, and even cause great disasters, thus affecting Chinese national industrial construction. The task of this department is to train experts who can understand the rule of the growth and development of plant pests and can master the scientific knowledge and technique needed to prevent such damage. Their task, in turn, is to control and stop existing pests and to formulate reasonable pest examination measures to prevent the development of harmful plant pests inside and outside the country. This will assure a good harvest and the improvement of crop quality.

The main special courses of this department are: general plant pathology, barn pests, plant chemical protection, entomology, agricultural insects, regional pests.

V. Soils

The goal of this department is to improve the soil and to raise fertility in order to raise agricultural production. The task of this department is to train experts versed in the law of soil development who can master soil survey, obtain an accurate knowledge of the soil, of the fertilization and improvement of the soil, and of soil cultivation technique. Their task, in turn, is to direct the farmers in techniques for fertilizing, irrigating, and

cultivating, and to reasonably plan better utilization of China's soil and to develop and raise agricultural production.

The special courses of this department are: soil, soil survey and drawing, soil improvement, agricultural chemistry, cultivation, etc.

The fundamental courses of this department are: chemistry, geology, botany, microbiology, etc.

VI. Agricultural Pharmacy

The goal of this department is to study and apply pest pharmacology.

The application of pharmacology to prevent pest damage to crops is an essential measure for improving agricultural production. This department's task is to provide experts with a definite knowledge in agricultural science, to have them master the efficient use of farm products or to constantly improve the application of various pharmacological products and to make the students capable of research on pest pharmacology in order to raise their efficiency. The students will work to increase the high quality production of cotton, fruits, and vegetables, and to maintain high and steady production in order to meet the demands made on agriculture by Chinese national industrialization.

The fundamental special courses of this department are: analytical chemistry, organic chemistry, physical chemistry, etc.

The main special courses of this department are: insects, plant pathology, agricultural pharmacology, etc.

VII. Animal Husbandry

The goal of this department is to raise agricultural production and to develop animal husbandry, with equal emphasis on rural and pastoral areas, stressing domestic animal feeding, management and breeding, so as to develop animal husbandry.

Animal husbandry is essential in agriculture. To meet the needs of national socialist industrialization it supplies industrial materials and energy for production machinery; by integrating and guaranteeing the development of agricultural production it also supplies the animal products needed by the people and thus helps raise their living standard.

The task of this department is to train advanced cadres in animal husbandry, cadres who are healthy, have attained a high degree of knowledge in Marxism-Leninism and a broad scientific foundation, and who can master the advanced theory and technique of the systematic feeding, managing, and breeding of animals. Their task, in turn, is to develop animal husbandry.

The special courses of this department are: genetics and animal breeding, animal feeding, horse production, cattle production, sheep production, swine production, domestic poultry, domestic animals, general principles of veterinary science, domestic animal products, artificial fecundation, etc.

The fundamental courses of this department are: Darwinism, domestic animal physiology, microbiology, etc.

VIII. Veterinary Science

The goal of this department is to raise agricultural production and to develop animal husbandry with equal emphasis on rural and

pastoral areas, stressing preventive and control measures in connection with domestic animal diseases and parasites in order to protect domestic animals and guarantee the growth of animal husbandry.

The task of this department is to train healthy veterinary surgeons who have attained a high level in political theory, and who can master the full systematic theory and technique of the advanced veterinary science. They must carry out their assignments in order to strengthen the feeding and management of domestic animals; they must stress prevention over control measures and service in state farms, ranches, or rural areas.

The special courses of this department are: veterinary hygiene, general pathology, surgery, obstetrics, artificial fecundation, and veterinary hygiene.

The fundamental special courses are: the anatomy of domestic animals, embryology, the physiology of domestic animals, veterinary microbiology, parasites, pharmacology, the breeding and feeding of domestic animals, physiological pathology, anatomical pathology.

IX. Farm Hydraulics

The goal of this department is to train advanced technical cadres in farm hydraulics. Farm hydraulics is the science of using the dam, dike, reservoir, tunnel, and other hydraulic constructions to store, transport, and distribute water to meet farm needs; it is concerned with the reasonable use of water to satisfy the requirements of various types of soils and plants, with fulfilling the needs of crops, with improving the quality of the soil and preventing its alkalescency. It is concerned with hydraulic measures on

state farms and helps the farmers undertake small scale public hydraulic projects; it helps to promote the movement for mutual assistance and cooperation in the rural areas, to guarantee and raise crop production and to supply enough food and industrial materials for the socialist construction of China.

X. Mechanization of Farm Production Process

Farm mechanization is essential for reforming agricultural socialism in accordance with the general policy in effect during the transitional period in China. The department concerned with the mechanization of farm production studies how to increase the mechanization of farm production, how to apply farm machinery more efficiently, and how to improve unit production. It trains farm mechanical engineers to undertake production for socialist agricultural enterprises: e.g., the state farm, the tractor station, and farm tool repair shops, etc.

The main courses of this department are: theoretical mechanics, mechanics of materials, principles of machinery and machine parts, farm mechanics, the tractor, farm machinery repair, fuel, lubrication and water, application of farm machinery, soil cultivation, crop breeding, etc.

XI. The Management and Administration of Socialist Agricultural Enterprises

This department aims to direct the individual, small farm economy toward collectivization. Under the glorious direction of the general policy for the period of transition in China and on the basis of the directives of our national policy, this department studies such theoretical knowledge and practical technology as

construction, planned production, planned management, production organization, labor organization, financial management, the work quota of the socialist agricultural enterprise. It trains higher cadres to direct the management and administration of socialist agricultural enterprises -- state farms, collective farms, tractor stations, etc.

The courses of this department can be divided into the following 3 sections: (1) Marxist-Leninist political economic theories (about 25% of the total); (2) Fundamental knowledge and technical courses in farm production (about 29% of the total): soil fertilizer, cultivation and crop breeding, domestic animal feeding and management, farm tools, fruits and vegetables, surveying, etc; (3) Special courses in management and administration (about 44% of the total): agronomy, the organization and management of state farms, principles of statistics and agricultural statistics, principles of accounting and farm accounting, analysis of the activities of agricultural enterprise activities, the financial planning of state farm production, the organization, management, and finance of the tractor station and collective farm, etc.

XII. Silkworm and Mulberry

Silkworm and mulberry raising is an essential side business in many Chinese rural areas. Moreover, the natural conditions of vast areas are good for growing mulberry trees and for raising silkworms.

This department aims to train advanced technical cadres, well versed in wide agricultural scientific knowledge and able to master and direct silkworm and mulberry production, to guarantee an abundant supply of good material for the silk industry.

Besides courses in political theories, the main courses of this department contain the following fundamental courses and basic agricultural courses: physics, chemistry, meteorology, soil, fertilizer, botany, plant physiology, microbiology, crop breeding, zoology, entomology, Darwinism, Michurin genetics and seed selection, agronomy, farm mechanization and the organization of the socialist agricultural enterprise; the following special courses: silkworm breeding, mulberry breeding, silkworm genetics, silkworm anatomy and physiology, silkworm diseases, mulberry pests and the silkworm cocoon, etc.

XIII. The Tea Leaf Department

The tea leaf is a special product of China.

This department exists to train higher technical cadres for tea tree breeding and for tea leaf processing. Through its efforts the special national product of China will be developed and the needs of our national economical construction and those of our people will be met.

The main courses of this department are: tea tree breeding, tea leaf making, tea leaf machinery, the tea trade, etc.

XIV. Forestry

Forestry is especially important for supporting industrial construction and for the reformation of the natural surroundings. Such construction and reformation have already been realized with great efficiency in the Soviet Union. After the liberation, because of the emphasis of the Communist party and the government on forestry rapid progress was made in both these areas. In supporting the war for liberation, in the reconstruction of our economy, in the

anti-American movement to support North Korea, and in completing the first year of the First Five-Year Plan, forestry played a positive role in supplying lumber and in overcoming natural disasters against farm hydraulics. At present forest construction areas are developing prosperously.

According to the general policy for the transitional period and the demands of the Five-Year Plan forestry is as important to industry as are coal and steel. Suppose we estimate the national lumber need for 1952 as 100; then by 1957 it is going to be increased to 226; by 1962, to 370. With the yearly increase in the demand for lumber, we are requested to expand forests constantly. Besides, wood products are also materials for other important industries. Moreover, forestry work must also struggle against flood, storm, and sand disasters. We must undertake works for reforming the natural surroundings, works like the nature reformation plan and the project of the Soviet Stalin. By so doing we will increase agricultural production; this will be in accordance with the socialist reformation of agriculture.

The department of forestry is established on the basis of the Soviet Union's advanced scientific experience in forestry. Its aim is to train forestry engineers who have the Marxist-Leninist viewpoint on political matters and a wide scientific foundation in forestry. It attempts to train men who can plan and direct forest production work independently. They are trained over a 4-year period by integrated methods of applying theory to practice, using theoretical teaching methods, field training and production training.

The curriculum in addition to theoretical courses in Marxism-Leninism includes the following fundamental courses in general science:

advanced mathematics, physics, general chemistry, analytical chemistry and variables accounting, fundamentals of plant production, Darwinism, botany, plant physiology, soil, meteorology, etc; courses needed for work in the forestry production development: projection geometry and engineering mechanics; special fundamental courses: tree science, tree breeding, cultivation and mensuration; special courses: forestry, forest growing, forest soil improvement, tree mensuration, forest management, forest utilization, forest mechanization, use of the airplane in the forest, forest economics and industrial organization, etc.

Students who want to enroll in this department must have a good foundation in biology, mathematics, physics, and chemistry. They must also be healthy.

XV. Lumber Industry Department

(1) The goal of this department is to train lumber mechanization processing engineers.

(2) The function of the cadres trained in this department in Chinese national socialist construction along socialist lines is as follows:

Lumber is essential for all kinds of construction. The rapid development of our national grand scale economic construction has also caused the mechanized processing of lumber to increase. The chief task of lumber mechanization processing is to make the raw wood (material produced by logging) into great quantities of standard construction material, defense material, communication material (railroad ties, electric poles, bridges, etc) and the windows and furniture needed in people's daily living by mechanized drying and

processing or by applying chemical seasoning to the lumber materials (like railroad ties, bridges, electric poles, etc) to prolong the durability of the lumber material, economize in using lumber materials; or make lumber into plywood to increase the application and utilization of lumber. Therefore, lumber mechanization and processing is an organic part in the adjustment of the industrial system. It guarantees the accomplishment of socialist industrialization. This department is established to meet such objective needs. It is devoted specifically to training advanced technical cadres for mechanizing lumber production, drying processing and chemical seasoning of the lumber as well as for the manufacture of plywood for the lumber industry or the factory.

(3) The main courses of this department are divided into 3 parts:

(1) Fundamental courses: physics, advanced mathematics;

(2) Special fundamental courses: engineering drafting, theoretical mechanics, mechanics of materials, electrical engineering, thermomechanics, wood structure, wood technology;

(3) Special courses: lumber manufacture, lumber drying, lumber preservation, and plywood manufacture.

Students who want to enroll in this department must have a good foundation in mathematics and physics and be healthy so that they can do their studies and carry out future practical assignments.

XVI. The Mechanization of Logging and Transportation

(1) Goal of training: to produce engineers for logging in the forests and for mechanizing transportation.

(2) The function of the cadres trained in this department in national construction along socialist lines is as follows:

Lumber is essential to economical construction and to our daily life. There is a great demand for lumber in China's socialist construction period. With the raising of the people's material and cultural standard more lumber is needed. The old fashioned manual method of producing lumber can no longer meet the rapidly growing demand for lumber. Consequently, the forest logging and transportation industry has started mechanized and electrified production. Due to the necessity for this type of production, this department for logging in the forests and for mechanizing transportation was established. Its purpose is to provide cadres with the theoretical foundation and practical technique needed to satisfy the demands for mechanization in logging and transportation -- a field which is becoming more complicated day by day -- and to guarantee the production of various kinds of low cost lumber by mechanized and electric production methods. Thus this department attempts to reach the quota and standard set by national planning and to meet China's needs for various kinds of large constructions.

(3) The main courses in this department are:

(1) Fundamental courses: advanced mathematics, physics, chemistry, etc.

(2) Special fundamental courses: engineering drafting, theoretical mechanics, engineering mechanics, electric engineering, thermoengineering, surveying, hydraulics and hydraulic engineering, engineering structure, principles of mechanics and mechanical parts, etc.

(3) Special courses: machinery for use in the forest, forest logging and mechanization in forest work, the mechanized land and water transportation of lumber, etc.

Students who want to enroll in this department must have a good foundation in mathematics and physics and be in good health so that they may carry on their studies successfully and carry out the assignments they may be given in the future.

GUIDE TO ALL THE CONSOLIDATED UNIVERSITIES IN THE NATION

In all China there are now 14 consolidated universities: Chinese People's University, Peking University, Nankai University, Northeast People's University, Futan University, Shantung University, Nanking University, Amoy University, Wuhan University, Chungshan University, Szechwan University, Yuannan University, Northwest University, Lanchou University.

The consolidated universities generally have social science departments and natural science departments: like Chinese, history, economics, law, Western languages, Russian, mathematics, physics, chemistry, biology, etc. Some of the consolidated universities also include the following: a technical college, an agricultural college, and a medical college. They may have a department of statistics in finance and economics. The departments in the Chinese People's University chiefly treat finance and economics and government and law. For example, they have departments of economics, statistics, law, etc. Generally speaking, after the departments had been reorganized all the consolidated universities had been strengthened. For example, the present Peking University is based on the original Peking University, plus some of the liberal arts and science departments of the original Chinghwa University, the Yen King University,

and others. The present Futan University is also based on the original Futan University, plus some of the liberal arts and science departments of the original Chekiang University, Chiaotung University, and others. Other universities like Nanking, Wuhan, Chungshan, Szechwan, etc, have all been strengthened in different degrees. Besides, due to the comparatively long history of these universities they can in general be said to have better foundations.

Education in the consolidated university has its specific task in the higher educational system. The main task of the technical institute of higher learning is to train experts for various kinds of practical projects. The task of the consolidated university is mainly to train experts for research work or teaching in theory or in the fundamental sciences (natural and social). The school of sciences in the consolidated university provides the foundation for the engineering, agriculture, and medical schools. It directly influences the development of engineering, agriculture, and the medical sciences: for instance the role of modern physics in modern industry, of Michurin theory in modern agriculture, of Pavlov physiological theory in modern medical science are all very significant. The various languages studied in the language department of the consolidated university are instruments for cultural exchange and for social contacts between groups of people. Moreover, the sciences of philosophy, literature, and history based on dialectical materialism and historical materialism, are the ideological weapons that direct the proletariat to victory in the revolution and in socialist construction. The study and improvement of these sciences further the progress of all cultural and educational projects as a whole. Therefore the consolidated university is an important landmark in the cultural and scientific development of China.

Because of the specific tasks mentioned above the goal of the consolidated university is mainly to train scientific research experts. But the working posts of the scientific research experts can be in the Academy of Sciences, in the institutes of higher learning, in the factory, in the cultural organization, as well as in the middle school. Therefore the concrete task of the consolidated university is to train scientific research workers, teachers for higher institutions of learning and for the middle schools. Of course the goal of the engineering, agriculture, medical science, finance, and economics departments that are still attached to the consolidated universities is still mainly to train experts for practical work; so are the departments of journalism, library science, etc. Generally speaking, because China must now train many experts of all kinds, all the higher institutions of learning are developing rapidly; and therefore more teachers are needed for the fundamental courses in the higher institutions of learning. Therefore, the consolidated universities must now send many teachers to higher institutions of learning. Some of the graduates of the consolidated universities go to middle schools to teach. However, because the main goal of the consolidated university is to train research experts, it differs somewhat from the advanced teacher's college whose purpose is to train middle school teachers. The graduates from the consolidated universities have received more training in subject matter, whereas the graduates from the advanced teacher's college have received more knowledge in the field of education. When these 2 are combined the teaching level of the middle schools can be raised still more.

Some students incorrectly think that being a teacher is not glorious. But whether a job is glorious or not does not depend on

the position, but rather on the record of one's work. We know that the Russian hero Zaya [sic]'s mother is a middle school teacher. Some of the graduates of the Moscow University are sent to middle schools to teach. Therefore we hope you students correctly recognize the characteristics and position of the consolidated university, fully consider China's needs as well as your talents and interests. Select your majors in the higher institutions of learning carefully.

LIBERAL ARTS

The liberal arts division of the higher institutions of learning (except the teacher's colleges) now have 24 departments distributed among the 14 consolidated universities, 8 language schools and one minority college. Departments open for enrollment this year are: Chinese language, journalism, history, archaeology, philosophy, psychology, Russian, English, German, French, Spanish, Japanese, Korean, Indonesian, Arabic, minority language, library science, etc. Most of the departments aim to train scientific research experts and higher and middle school teachers. A few of them aim to train translation experts. After graduation the students can work in scientific research organizations, higher and middle schools, cultural publishing organizations, libraries, and governmental organizations.

The enrollment goal this year in the liberal arts division of the higher institutions of learning is 7,710 students, about 7.86% of the total enrollment in all fields in the higher institutions of learning. Due to the different teaching tasks of the various departments, they play different roles and occupy different positions in Chinese national economic construction and cultural construction.

Let us take the Chinese department first. The excellent tradition of Chinese literature, from the Book of Odes, Ch'u poetry, to

the writings of Lu Hsün, lasted more than 2,000 years and has stood the test of time. These literary treasures urgently need systematic reorganization. To study Chinese language and literature we must assume a correct viewpoint to systematically reorganize our national literary legacy "discard its feudal rubbish; absorb its democratic essence," not only to maintain but also to glorify the excellent tradition of the national literary legacy. Thus we will use the patriotic spirit to educate our people. On the other hand we must scientifically study and reorganize our native language, to discover and master its grammer, to study language reform. Thus we will raise the cultural level of the broad masses of the workers and make it possible for other peoples to study Chinese. This is important considering the growing importance of China's political position and the growing development of the international situation. To reach the above goals the Chinese department equally emphasizes language and literature. Although the goal of this department is not to make writers -- as writers must be created by the trials and errors of actual life -- but it helps to make good writers, because a good writer, besides having a rich experience of life, must also have mastered his native language and its literary legacy.

The science of history is an important weapon of the revolution. Chairman Mao has said: "One must not only understand foreign revolutionary history, one must also understand Chinese revolutionary history; one must not only understand today's China, one must also understand the China of yesterday and of tomorrow." We study the science of history to thoroughly understand the objective rules of social historical development, to critically absorb the Chinese literary legacy and foreign cultural products, to make the science

of history influence the life of the whole society, to affirm the people's will and belief in the progressive road, as well as to enrich the new Chinese culture. China is still only beginning to study and reorganize history from a new viewpoint. Many cadres will be needed to pursue this work vigorously in the future. The victory of the Chinese people's revolution, like the Soviet Union's October socialist revolution, is significant in world history. In short, the experience of the Chinese people's revolutionary struggle not only greatly helps the current construction of the Chinese people, but also plays a realistic and directing role in the anti-imperialistic struggle of the various oppressed nations of the Orient. From now on we must also intensify our study of Asian history, because relations between China and the other Asian countries are becoming closer day by day. Furthermore the study of world history should likewise be increased.

Marx had said: "Foreign language is the tool of the struggle for life," at the same time it is also the tool that masters the culture of all humanity. With the growing importance of China's international position our country's contact with other countries in international affairs will likewise increase. Among the foreign languages, French is most popular in diplomacy; German, most popular in industry; English remains one of the popular international languages; Spanish is popular in Spain, Portugal, and the Latin American countries; on the other hand Japanese, Korean, Indonesian, and Arabic are the languages used by the Oriental peoples. Experts trained in the language departments chiefly undertake the study and translation of foreign languages and literature. At present China is still very short of translation experts. Cultural and diplomatic organizations all need many translation cadres. Not only

should many writings by modern revolutionary writers -- like Ah-La-Kung (?) Neiluda (?) -- soon be translated but very many foreign classics, like Shakespeare, Gothe, etc, should also be gradually translated. Widely absorbing foreign progressive culture to enrich our new culture, and promoting cultural exchange with other peoples to strengthen friendship and unity with other peoples are very important politically for guarding world peace.

Russian ranks first among foreign languages. "Study the Soviet Union!" was one of the 3 slogans of chairman Mao. The study of Russian is the tool for the study of the Soviet Union. The Russian language spreads the most elevated thoughts and the most advanced cultural, scientific, and technical accomplishments. Mastery of this language means holding the precious key to the gate of the new world. In that world there are abundant advanced cultural, scientific, and technical treasures as well as the fruits of the wisdom of the excellent Russian revolutionists, scholars and writers. These never run short. In the last 4 years with the full scale and unselfish assistance of the people of the USSR the construction of our great China has already progressed rapidly and achieved great results. These achievements are inseparable from the work of our Russian language cadres. In the First Five-Year Plan the Soviet government will help China build and rebuild 141 large scale projects. The construction of these projects needs a great many Russian language cadres to undertake oral and written translations. At the same time to meet the need for courses in Russian in the higher institutions of learning and to partially meet the same need in the middle schools, it is also necessary to train a certain number of higher and middle school Russian language teachers. The training of Russian translation cadres and Russian

language teachers is very important for studying the advanced scientific knowledge and experience of the Soviet Union and thus for promoting our national construction work. Without Russian language translation cadres and teachers we have no way of studying the Soviet Union; thus without them Chinese socialist industrialization would be affected.

Besides, experts trained by the journalism department will do editorial work for newspapers. Newspapers themselves are very important for organizing and mobilizing all the Chinese people for our national construction work. Experts trained by the philosophy department will engage chiefly in political education. They will teach all the Chinese people to gain a thorough Marxist-Leninist understanding of the great task China faces. They will encourage the Chinese people to struggle to further great construction work in China. Experts trained by the archaeology department will undertake excavation and research work on our national antiques which lie hidden underground. The large scale construction work carried out in recent years has led to the discovery of many antiques hidden underground. Such discoveries gradually draw people's attention; thus experts in this field are needed more and more. The working cadres trained by the minority languages department to do research on and master the minority languages will greatly help to improve the culture of the minorities. For work in psychology and library, China also needs several cadres.

Because they do not understand the different departments of liberal arts and lack knowledge of the complexity of Chinese national construction, some of the youth still hold false opinions. They presume that a liberal arts major cannot contribute as much to the nation as a science major. Therefore, they do not intend to

major in liberal arts. But we know that China's economic construction is planned and developed proportionally; so is the training of various construction cadres. Of course, technology is directly integrated with industrial construction; thus it should be a crucial point. But the scope of construction is broad. It includes industrial construction as well as cultural construction. Furthermore, industrial construction cannot and should not be carried out singly. It must be organically integrated with all other construction. For example, will industrial construction without cultural construction suffice? Of course not! At present the linguists of China are working on reforming our language. Such a task is directly connected with the cultural future of our broad masses of workers and the speed of Chinese national construction. If our language is successfully reformed, the cultural level of the workers can be greatly improved; thus their wisdom and initiative in production can be developed. The importance of the other liberal arts is similar. Therefore, one's contribution to one's country does not entirely depend on one's profession, but mainly on the actual influence of the results of one's labor on Chinese national construction.

There are other youth whose good foundation in literature and history fits them for work in the liberal arts. But because they are afraid of becoming teachers they would not take the examination in liberal arts. Such an attitude is equally wrong. The chief goal of the consolidated university is to train scientific research experts; thus it differs from the advanced teacher's college whose purpose is to train teachers. However, due to pressure of work, some of the graduates of the consolidated universities will take teaching positions in higher institutions of learning and in the middle schools. To be a people's teacher to train construction

experts for the country is a glorious profession. The spread of all the precious knowledge and experiences of humanity all depend on the teachers. Without them it is impossible to send a steady flow of cadres to various economic construction organizations. At present educational construction is also important in the construction of all China.

After several years of thought indoctrination and teaching reformation the higher institutions of learning have developed greatly in all aspects. In social science and linguistic science they have also created good conditions for training experts in the economic and cultural construction of China. From now on, with the development of industrial construction in China and with the constant improvement of the cultural level of the Chinese people, there is no doubt that the graduates of all the liberal arts departments face a bright future.

I. Department of Chinese Language and Literature

The purpose of the department of Chinese language and literature is to train research experts in language and literature and teachers for higher institutions of learning and for the middle schools. In teaching it emphasizes research on language and literature. On one hand it must train experts to reorganize the Chinese legacy with new viewpoint, maintain and develop the excellent tradition of the Chinese national culture, to meet the urgent need of Chinese economic and cultural construction. On the other hand, it also lays a good foundation in language and literature for those creative experts who can really help socialist construction and for Chinese language research experts. Therefore, the students of this department must systematically study political theories,

and acquire a profound and broad knowledge of linguistics and literature.

The main courses of this department are: the revolutionary history of modern China, fundamentals of Marxism-Leninism, political economics, dialectical materialism and historical materialism, introduction to phonetics, Chinese language, introduction to literature, the literary history of China, selections of modern Chinese writings, Western literature, Russian and Soviet literature, etc.

Besides, there are other special courses in literature: like special courses in literature and language and ordinary language, etc.

Students who want to enroll in this department must have a definite foundation in language and literature.

(1) Chinese Language Department

The Han people of China have a long and rich cultural legacy. But at present there are many problems about the Chinese language -- grammer problems, problems encountered in research on the history of the Chinese language, problems of language reform, the problem of a survey and of research on various dialects, the improvement in methods of language teaching, etc. Research must solve these problems. Moreover research into the minority people's languages should also proceed vigorously. Therefore linguistics will play an important role in the gradual transition from the new democracy to socialism.

The purpose of this department is to train linguistic research experts who have theoretical training in the linguistic theories of Marxism-Leninism and considerable technique and Chinese language teachers for the higher institutions of learning. The main courses

of this department are: introduction to linguistics, the modern Chinese language, phonetics, the history of Chinese literature, the history of the Han language, the Han and Tibetan language system, and vernacular language.

Students who want to enroll in this department should preferably have a good foundation in language, literature, and social science. Such natural sciences like physics and physiology are also related to this department.

(2) Journalism Department

The task of the journalism department is to train reporters and editors for the people's news publishing enterprise. It was established on the basis of the advanced experience of universities in the Soviet Union and the actual conditions of China.

The people's press is an important propaganda enterprise for educating people in Marxism-Leninism. Therefore, those who want to undertake this type of work must have reached an adequate level in Marxist-Leninist theories, have a rich knowledge of language and literature, great writing ability and sufficient fundamental news theory and knowledge. The task of this department is just to train cadres to attain such qualifications.

Besides the general courses in political theories, this department also offers courses in language and literature and special courses in introduction to journalism, the theory and practice of editorial work, the news agency and broadcasting, news reporting and writing, editorials, the history of Chinese journalism, the history of Bolshevik journalism, etc. Students who want to enroll in this department must have a solid foundation in language and

literature, more knowledge in social sciences, as well as the determination to devote their whole lives in hard work for propaganda in Marxism-Leninism.

II. Russian Department

"Study the Soviet Union" was one of the 3 great slogans proposed by chairman Mao in 1953. The Russian language is a necessary tool for the study of the Soviet Union; spreads the most supreme ideals and the most advanced cultural and scientific technical achievements. Therefore to study the Soviet Union we must first study Russian and train Russian language cadres. In the past 4 years with the full scale and unselfish assistance of the Soviet government and people the construction of great China has progressed rapidly and attained great achievements. These achievements are inseparable from the works of our Russian language cadres. During the First Five-Year Plan, the government of the Soviet Union will help China with construction work on 141 large scale projects; some of these will be new buildings, others will be rebuilt. The government of the Soviet Union will send many industrial, economic, cultural, and educational experts to China to assist in construction in China. A great many books and materials from the Soviet Union are waiting to be translated. Therefore, there is an urgent need to train many Russian language cadres to undertake oral and written translation work. At the same time, for training Russian translator cadres and for beginning Russian courses in higher institutions of learning and in some of China's middle schools a certain number of higher and middle school Russian teachers must be trained to meet China's demand and to work directly for national construction.

The chief task of the Russian departments in the universities is to train middle school Russian teachers. Some of the universities

also train experts for research work partly in Russian literature and Soviet literature. The duration of study is from 3 to 4 years. Besides such courses in political theories like the history of the Chinese revolution, fundamentals in Marxism-Leninism, political economics, dialectical materialism and historical materialism, the main courses are: fundamental Russian (including reading, grammer, translations, etc to cultivate the ability to understand, speak, read, and write in Russian), phonetics of the Russian language, Russian terminology, history of the Russian language, introduction to linguistics, Russian and Soviet literature, history of the Soviet Union, methods of teaching the Russian language. In addition to providing for the growth and health of the students this department also offers courses in athletics. To improve the students mastery of his native language, this department offers courses in Chinese. For the separate training of experts in literary research, this department also offers the history of Russian literature (including Soviet literature), a history of Chinese literature (after the 4 May Movement), and a history of Western literature, etc.

To meet the great need for Russian language cadres in national construction Russian institutes have been established in China. They offer a 3-year course whose purpose was to train Russian translator cadres and some Russian teachers. Their main courses are: courses in political theory: the history of the Chinese revolution, fundamentals of Marxism-Leninism, political economics, etc; fundamental Russian (including phonetics, reading, translation from Russian into Chinese, translation from Chinese into Russian); Chinese, athletics; introduction to phonetics, methods of teaching the Russian language, etc.

Students who want to enroll in this department must be healthy and preferably have a good foundation in the Chinese language and literature.

III. Department of Western Languages and Literature

This department comprises 4 divisions: English, German, French, and Spanish.

(1) English

English is one of the most popular languages in the world. Not only people in England, the US, Canada, Australia, New Zealand, and part of the Union of South Africa use it, but also many people in India, Ceylon, and vast areas in Southeast Asia understand it. English is also the main foreign language in other areas of the world, like Latin America and the European continent. Therefore English is widely used in international affairs. In international conferences English is also one of the main languages.

To unite the people of England and America, and the colonial and semicolonial people of the world to struggle together to maintain world peace, to widely introduce the great achievements of the construction of China to encourage the oppressed people's faith in the struggle for liberation, English becomes a necessary tool in exchanging thoughts and culture and in strengthening friendly unity.

(2) German

German has considerable popularity in the world. Besides people from the German Democratic Republic and West Germany, some of the peoples from such East European countries as Poland and other countries like Switzerland, Austria, etc, also use German. Therefore,

whether in contact with the people of East Germany or with people from other countries, German is very necessary.

(3) French

French is one of the popular international languages. At present, besides France itself, most of the people from Belgium, Switzerland, the French African colonies (Algeria and Tunis) speak French. French is one of the languages used in international conferences.

(4) Spanish

Spanish is one of the popular world languages. About 150 million people speak it. Besides Spain, all central Latin America, with the exception of Haiti and Brazil, speak Spanish. Therefore, Spanish has now become one of the international languages and one of the official languages in important international conferences.

In the consolidated universities the Western language departments of Peking University and Nanking University have special courses in English, German, and French; some of the other universities only have a special course in English. Its task is to train cadres in Western languages and literature who can integrate patiotism and internationalism; are able to undertake preliminary research and to introduce and translate (Western languages and literature). Such cadres must have a solid foundation in language and the ability to do research in literature from a Marxist-Leninist viewpoint.

To reach the above goals the courses of this department emphasize literature. In the freshman and sophomore years the attainment of a solid foundation in English (German, French) is stressed; at the same time the Marxist-Leninist literary viewpoint is cultivated;

there are lectures on literary background and material on the history of Chinese literature and the student's ability to write Chinese is developed. The courses are: politics, fundamental English (German, French), the history of the modern world, the general history of China, introduction to literary research, Soviet literature, history of Chinese literature (after the 4 May Movement), and Chinese composition, etc. In the junior and senior years, training in English (German, French) is continued, but literature occupies a greater proportion of course time. The courses are: politics, history of English (German, French) literature, selection of masterpieces, Russian, Chinese classics, etc. The fundamental German or French courses begin from the alphabets, but the special English course requires a previous foundation in English.

Foreign language schools have 4 special courses: English, German, French, and Spanish. Their chief task is to train cadres of people's translators or linguistic workers who have attained a certain level in Marxist-Leninist politics and understand the foreign relations aspect of the special language in which they majored. The teaching must develop to the full the hearing, speaking, writing, and reading abilities in the foreign language in which the student specialized. The courses specially emphasize politics. They are: history of the modern Chinese revolution, fundamentals of Marxism-Leninism, political economics, dialectical materialism and historical materialism, Chinese language and literature, fundamental English (German, French, Spanish) -- including reading, grammer, phonetics, translation, etc -- a second foreign language, a history of international relations, world political economic geography, policy in current events, English (German, French, Spanish) literature, athletics, etc. It offers a 4-year course.

IV. Oriental Languages Department

The oriental languages department now offers a special course in each of the following 9 languages: Mongolian, Korean, Japanese, the Vietnam language, Burmanese, Thai, Indonesian, Hindu, and Arabic. There are courses open for enrollment this year in the following languages: Korean, Japanese, Indonesian, and Arabic. At present the chief task of the oriental language department is to train oriental language translator cadres in the field of diplomacy.

Since the establishment of the Chinese People's Republic, the Oriental situation as a whole has changed greatly. A heaven-shaking and earth-moving event like the liberation of 500 million Chinese cannot but evoke the rejoicing and acclamation of all the oppressed Oriental peoples. The Chinese people and all the Oriental peoples have enjoyed a long historical relationship and traditional friendship. After the Chinese people established their own regime, especially after they began large scale economic construction, they need more than ever to strengthen the economic cooperation and cultural exchange with these peoples and their countries. This makes it clear why we need to train cadres in oriental languages and literature. Therefore, to accelerate the training of qualified oriental language translator cadres becomes the glorious yet difficult task of the oriental languages department.

Students in the oriental languages department must study the following courses: fundamental Marxism-Leninism, the history of the Chinese revolution, political economics, dialectical materialism and historical materialism, Chinese history, Asian history, international relations during imperialism, general conditions in the country of the student's major, introduction to linguistics,

Chinese composition, a fundamental oriental language (just one), etc.

In teaching the oriental languages drill in a certain fundamental language is emphasized; this gives the students a mastery of the grammer and ordinary terminology of that language and makes them fluent in its use; it makes it possible for them to accurately represent, or at least without serious mistakes, the original meaning in oral and written translations. Knowledge of that specific field will be acquired in actual work after graduation.

At present, due to China's urgent need, the oriental languages department is chiefly concerned with training oriental languages translator cadres in the field of diplomacy. In the future it will undertake the difficult task of training research cadres in the literature, language, history, economics and culture of the oriental countries.

V. History Department

(1) History

The science of history is important in Marxist-Leninist social science. It concretely analyzes historical facts from the historical materialist viewpoint and explains the objective rules of historical development and the different aspects of the history of human society in its different stages. The science of history is an important tool for propagandizing internationalism and patriotism, and a powerful weapon for directing people with social development rules to struggle for the establishment of socialism and communism.

The purpose of the history department is to train research experts for the science of history and teachers for the higher and middle school history course.

Students in this department should study the following courses: history of the modern Chinese revolution, fundamentals of Marxism-Leninism, political economics, dialectical materialism and historical materialism, Russian, Chinese history, world history, history of the Asian nations, etc. These courses help students to understand and begin to use Marxist-Leninist viewpoints and methods to scientifically, systematically solidify their basic historical knowledge. On the basis of such theoretical knowledge further special training is given to students to enable them to obtain definite knowledge in their respective special fields, thus giving them a definite direction and ability for research and giving them the foundation they need for independent scientific research work and teaching assignments.

Students who want to enroll in this department should preferably have good writing ability and a definite foundation in language.

(2) Archaeology Department

Archaeology is an important part of the science of history. Under the direction of historical materialism, with the collection of (investigation and excavation of ancient sites) and research on the material culture data of the human legacy, this historical science surveys the objective principles of historical developments and the facts of social history for the enrichment of Marxism-Leninism. Archaeology uses the scientific theories of archaeology and scientific methods to educate the students and train them to be archaeological workers or researchers with training in Marxist-Leninist theories and wide historical knowledge and to be archaeology teachers in higher institutions of learning.

Besides having the same courses in political theories, Russian and fundamental courses in history, like the history department, the main courses of the archaeology department are: general archaeology (including field work), archaeology of the stone age, Chinese historical archaeology, history of Chinese arts, history of archaeology, ancient languages, the general theory of the museum. Students in this department must also have one year's field work (including archaeological excavation and investigation).

Students who want to enroll in this department must be healthy.

VI. Philosophy Department

(1) Philosophy Department (Special course)

Since the appearance of the class society, the knowledge of the world consists of only 2 parts: the knowledge of the production struggle and the knowledge of the class struggle. Natural sciences and social sciences are the crystallization of these 2 knowledges; philosophy consists of the generalizations and conclusions drawn from the natural and social knowledge; Marxist philosophy is the basis of the theories of the Marxist-Leninist party -- it is the ideological weapon that reforms the world with revolutionary tactics.

The goal of the philosophy department is to train for China research workers in Marxist philosophy and philosophy teachers for higher institutions of learning. After graduation students can be research workers in scientific research organizations or teachers in higher institutions of learning.

Courses of the third department are: history of the modern Chinese revolution, fundamentals of Marxism-Leninism, dialectical materialism and historical materialism, political economics, Chinese

composition, Russian, the history of Chinese philosophy, history of Western philosophy, logic, psychology, Chinese history, world history, biology, advanced mathematics, physics, chemistry, history of logic, theory of logic, logic of physics and mathematics, etc.

Students who want to enroll in this department should preferably have a good foundation and understanding in the natural sciences and in the social sciences.

(2) Psychology Department (Special course)

The task of the psychology department is to apply scientific methods to the study of the principles governing the occurrence and development of such processes as feeling, sensibility, memory, imagination and thinking, and the formation of man's interest, ability and character, and how they function in actual life. The task of psychologists is to arm adults in society with psychological knowledge and to help them understand and master the above rules. It also serves to train the character of the students themselves and to enable them to exert greater influence in the struggle for the construction of socialist society.

The psychology department in the consolidated university prepares psychology research workers and psychologists trained in Marxism-Leninism. They will be teachers in higher institutions of learning, research workers in scientific research organizations, middle school teachers, and workers in various organizations demanding psychological knowledge.

The main courses of this department are: fundamentals of Marxism-Leninism, the history of the modern Chinese revolution, political economics, dialectical materialism and historical materialism,

biology, human anatomy, human and animal physiology, Russian, history of Chinese philosophy, or history of Western philosophy, logic, linguistics, Chinese language, the nerve system, the experimental foundation of the Pavlov theory, general psychology, history of psychology, child psychology, psychological problems, etc.

VII. Minority People's Languages Department

The minority people's language department's purpose is to train working cadres in a fundamental knowledge of Marxism-Leninism and Mao Tze-tung thought as well as in linguistic science, to do translation, propaganda education and linguistic research on the minority people's languages, in order to participate in the construction of the minority people's areas.

China is a multipeople country. Each people has its own language. Before liberation the minority people's languages were being prejudiced against. Only a few of the minority peoples have a written language; most of them have only an oral language. The mass of the minorities who do have a written language very rarely use it. It is either too classic, too multiform, or too simple. Thus it cannot be used effectively as a tool for spreading culture among the people. The minority peoples are thus limited to living in a simple culture and a narrow society. This seriously hinders their development.

To assist the minority peoples in raising their political and cultural level, in order to unite the minority peoples in China for the construction of China, the training of experts in the minority people's languages and in linguistic scientific knowledge has great political significance.

The minority people's languages department of the Central National College has already opened courses in 16 minority people's languages: Mongolian, Tibetan, K'ai Wa, Yi, Tong, Miao Yao, Pu I, Na Hsi Wei Wu Erh, Uighur Wei Wu Erh, Kiang Pao, Tai Wa, Tai, Li Mei, Kazakh, and Tong. Due to the many forms of the minority people's languages, general linguistic methods are not applicable here. For instance the Mongolian people and the Uighur people not only have written languages but also a systematized grammer. Some languages like the Tibetan have a written language and grammer but it is too classic and too far removed from the colloquial language. Some languages like the Na Hsi Wei Wu Erh have a written language, but are comparatively simple and not practical. Some languages, like the Miao language, have partially adopted the language formed by Western missionaries for missionary work, yet such a language is not widely used. The majority of the minority peoples do not have a written language. The Mongolian language and the Uighur Wei Wu Erh language, in general, can adopt general linguistic methods. However, for other languages, especially those without a written language, new study methods must be created. Students of this department generally have to study the minority people's languages, linguistic theory (like phonetics, pronunciation, etc) and politics, etc. After they have attained a certain foundation, they will be sent to the minority people's areas to master their respective languages.

VIII. Library Science (Short course)

Library science studies the organization, work contents, and working methods of the library. It studies how to utilize books and publications to actively propagandize communism; promote patriotism; help to improve the political, cultural, scientific, and artistic

levels of the people; and make the library a real socialist cultural base and an honest assistant to the party and government in their work of educating the workers.

The purpose of this short course is to train cadres for work in the large public libraries (including the National Library), governmental organizations, libraries in research organizations (data rooms), and library school teachers.

This short course offers a 3-year course and a 2-year course. The courses of the 3-year course are: history of the Chinese revolution, fundamentals of Marxism-Leninism, political economics, dialectical materialism and historical materialism, the general history of China, the history of Chinese literature, world history, the history of world literature, a general introduction to science and technology, Russian and 4 special courses: (1) library science (including general library science, library books, reading guide, library organization), (2) the library catalogue (including a general introduction to the library catalogue, the organization of the library catalogue, the principle of library classification), (3) catalogue (including the general catalogue, the special catalogue), (4) library knowledge (including fundamental knowledge of books, reference materials, history of books). These courses are meant to constitute a complete system in the special knowledge of library science.

Besides the 4 courses in politics, the 2-year course includes the following courses: Chinese, English, the Chinese library catalogue, library technique, general introduction to library science, Western books catalogue, classification, library administration, etc.

SCIENCE

The consolidated university is the foundation of the various specialized higher institutions of learning (like engineering, agriculture, medical science, the teachers' college, finance and economics, government and law, etc) and scientific research organizations. It is also an important landmark in Chinese national scientific and cultural development. Its chief task is to train scientific workers and teachers in natural sciences and social sciences to undertake theoretical research. The science division of the university is devoted to training scientific research experts and teachers in various branches of the natural sciences.

Due to their different specializations, the graduates of the science division of the university will undertake scientific research work in the research institutes of the Chinese Academy of Sciences, the research institutes of the different (governmental) departments, factories, mines, laboratories, and testing laboratories. They can also undertake practical technical projects in the defense or production departments, or take teaching or research positions in the various higher institutions of learning and in the middle schools.

Of the 14 consolidated universities in China all but the Chinese People's University, namely Peking University, Nan Ka'i University, Northeast People's University, Northwest University, Lanchou University, Futan University, Nanking University, Shan Tung University, Amoy University, Wuhan University, Chungshan University, Szechwan University and Yuannan University, have science departments. At present the science division of the university trains various types of experts in 4 branches of natural science:

(1) It has 4 departments dealing with mathematics: mathematics, mechanics, astronomy, and physics.

(2) It has 5 departments dealing with chemistry: inorganic chemistry, organic chemistry, analytical chemistry, physical chemistry, and plastic chemistry.

(3) It has 4 departments dealing with biology: zoology, human and animal physiology, botany, and plant physiology.

(4) It has 5 departments dealing with earth sciences: geography, natural geography, geology, meteorology, and oceanography.

The teaching plan of the science departments of the universities follows the advanced experience of the national universities of the Soviet Union in the training of scientific research experts. Generally speaking, before the junior year, the students are given a broad and profound knowledge in theories; in the senior year they are given specialized training. That means that students, besides taking a series of nonelective fundamental courses and special courses in their respective departments, must also take specialized courses. Thus the students may acquire a deeper and more specialized knowledge in a certain part of his major science. This will help him with the practical problems which he will encounter in future scientific research work. This is one of the special characteristics of the consolidated universities. For the same goal, a laboratory and thesis seminar are given in the science departments. In the junior year students are organized for field training in production in the scientific research organizations, departments and mines so that they may understand how their respective sciences are related to production and that they may train their independent research abilities. This helps to provide the necessary preparation for the graduation

thesis. Upon the foundation of the thesis seminar, special theories, laboratory experiments and production field training, students study the specialized courses, and make specialized experiments that are definitely in the nature of scientific research. At the end of their studies, they have about 10 weeks to do their thesis. The advanced teaching methods mentioned above are important in training creative scientific experts. They are an important element in the teaching plan of the science departments.

At present all the science departments in the various universities, with the exception of the mathematics and physics departments of Peking University which offer 5-year courses and the meteorology short course of Nanking University which offers a 2-year course, offer a 4-year course.

How do natural science experts work for national construction along socialist lines? What is the relationship of the natural sciences to the various technologies (like engineering, agriculture, and medical science) and their relationship to the social sciences?

The science departments of the universities by integrating scientific work and teaching work, train natural science cadres to combine theory with practice. They will not only participate directly in practical work for Chinese national construction in various fields, they will mainly participate in economic and defense construction in their scientific research work. That is to say, on the one hand they will widely apply the results of scientific and theoretic researches to production technique (like industry, agriculture, medical science, etc); on the other hand, natural scientists are needed for thorough research into and solution of the constant theoretical and practical problems encountered in production technique -- so as to

direct the constant improvement and perfection of production technique.

The sciences of mathematics, physics, and chemistry are the foundation of modern industrial and defense technology. In the Soviet Union, mathematics, physics, and mechanics have already been widely applied to forecasting earthquakes, weather forecasting, communication and transportation, mining, mechanics, metallurgy, machine building, instrument manufacture, machine automation, long distance mechanical control, television, broadcasting, etc. The science of chemistry has been applied to mining, petroleum, artificial rubber, dyes, fiber and leather dressing, paper making, liquor making, etc. At present, China has not yet reached a high level in science and technology, but with the development of national industrialization along socialist lines and with the constant improvement of scientific and technical levels, the sciences of mathematics, physics, and chemistry will certainly be rapidly applied on a large scale. Consequently, during the period of national construction along socialist lines, besides many engineers and technicians, enough experts in mathematics, dynamics, physics, and chemistry are needed to undertake work for industrial and defense construction.

The sciences of biology and chemistry are the foundation of agriculture, forestry, animal husbandry and public health; at the same time they advance these fields. Without botany, zoology, physiology and chemistry, it is impossible to establish agriculture, forestry, animal husbandry, and the medical and pharmaceutical sciences or to make these flourish. The theory of the great nature-reformer, Michurin, and the theory of the great physiologist, Pavlov, both opened a new direction for agriculture, medicine, and other sciences. These pave the way for the great work of reforming the world for the good of mankind.

Geology and geography workers in the earth sciences will use the results of field investigation and research to excavate, utilize, and plan national economic resources, so that they may be used for socialist construction. Meteorology and oceanography workers are directly concerned with weather forecasting and research into storm, wave, tide, current, ocean sound and light, etc. Their work is important for construction for national defense and for such economical constructions as constructions for communication and transportation.

For the educational system and the scientific research system the science departments of the universities train teachers in fundamental and theoretical courses in the natural sciences to prepare them for various higher institutions of learning such as the engineering school, the agriculture school, the medical school, etc, and for some middle schools. They also send research experts to various scientific research organizations. From such tasks their basic importance is obvious.

Science not only has a blood relationship with such technical sciences as engineering, agriculture, and the medical science, it is also integrated with the social sciences. Without the direction of the Marxist-Leninist philosophy it is impossible to struggle against all false science and idealism in natural science. For example, criticisms against the heredity theories of Weissman [sic] and Morgan in biology, criticisms against the theory of resonance chemistry, and the criticism of idealism in mechanics in the field of physics, have all been carried out on the basis of dialectical materialism. On the other hand, physics, chemistry, and biology also provide a basis in natural science for Marxism-Leninism. For instance physics uses experiments to test the reality of its theories.

And the theory of the great biologist Pavlov on research into the second signal system and nerve types has great significance to psychology, education, linguistics, and other fields.

Some students still do not completely understand or wrongly understand the characteristics of the science departments. For example, some students feel that "engineering is better than science." The desire of many of our youth to major in engineering during the period of national industrialization along socialist lines is both natural and valuable. However, it must here be pointed out that it is wrong for some students to maintain that to major in science means just to talk empty theories and not to serve industrialization at all. Without science and natural science workers the nation cannot have an advanced industry, agriculture, or modern national defense; without these the nation is deprived of wealth and strength, for these are closely related to production and the building up of national defense. In physics, for instance, the discovery of magnetic induction by Faraday in 1831 enabled people to make wide use of electricity. This accelerated the rapid development of a new technical science -- electrical engineering -- and hastened the development of the electric motor, radio engineering, etc. Other discoveries like the utilization of atomic and solar energy will fundamentally change technology. At present many graduates in mathematics and physics are working in the research laboratories of big Chinese factories and mines; and many chemistry graduates are working in the chemical laboratories of factories and mines. Today many good mathematics students do not enroll in the mathematics department, and many good physics students do not enroll in the physics department. This objectively affects the development of Chinese science and will affect the welfare of China in the long run.

Some other students lack the confidence to major in science. They think that to be a scientist and to do research one must be a genius. This is a very limited outlook. Of course research work is hard. But if one masters the correct views and methods and takes the Marxist-Leninist view, if one proceeds with boundless devotion to the service of China, with a profound interest in science and with all one's heart and soul, disregarding entirely obstacles and failures to find the real essence of science, one will certainly master and discover principles of natural science and objective truth and will have "hopes of reaching the bright summit." Furthermore, China just now in the transition to socialism, is calling young students to "march toward the scientific castle." You young people should have such "an ambition"; dare to undertake this glorious historical task.

I. Mathematics and Physics

(1) Mathematics Department (Special course)

Mathematics is a science that studies the relationship of numbers and quantity and the form of space. It is the foundation of the natural and technical sciences. All natural sciences, as well as social sciences, like mechanics, astronomy, physics, meteorology, chemistry, geology, geography, political economics, statistics, etc, must use mathematics. General industrial technology and science for defense must also use the methods and results of mathematics. Therefore, the new results of mathematical researches become more and more significant to the development of modern mechanics, physics, and technical science. Mathematics is also the foundation of industrial education and scientific research work. Engineering technical experts and scientific workers must all master

modern mathematics so that they may solve practical problems and conduct research. Consequently, mathematics plays an important role in the development of present economic construction and in national cultural and scientific development.

The purpose of the mathematics department is to train research workers for scientific research organizations for China's defense and industrial departments and to train mathematics teachers for higher institutions of learning and the middle schools.

Besides courses in politics and Russian, the main courses of this department are: mathematical analysis, complex variable functions, real variable functions, probability theory, differential equations, integral equations, group theory, analytical geometry, analytic geometry, fundamentals of geometry, advanced algebra, theory of numbers, physics, theoretical dynamics, etc. Besides, depending on the different conditions in the different universities, special courses are offered in which special problems of a scientific research nature are discussed. Moreover, special courses are offered in the specialized fields of functional theory, differential equations, probability theory, algebra and topology, differential geometry, algebra, number theory, etc. These exist chiefly to train scientific research experts.

Students who want to enroll in this department must have a good foundation in mathematics and physics.

(2) Mechanics Department (Special course)

Mechanics is a science that studies body movement and the reaction of forces. All technical industries and the defense technical industries must apply mechanics. The study of new findings

in mechanics is closely related to the development of modern technical science just as developments in gas mechanics are closely related to aviation theories, just as elasticity theory is closely related to the durability of the project structure; just as developments in general mechanics and applied mechanics are closely related to the automation of production processes. Thus the science of mechanics is very important in China's economic construction. It is the foundation of all engineering technology.

The task of the mechanics department is to provide China with research workers trained in more advanced mathematics, workers who can master certain experimental and research methods needed for work in scientific research organizations and in defense and industrial departments. It is also to provide mechanics teachers for higher institutions of learning and for middle technical schools.

The main courses of this department are mathematics (including mathematical analysis, differential equations, advanced algebra, analytical geometry, functions of complex variables, group theory, friction of variables, differential geometry, etc), physics, theoretical mechanics, fluid mechanics, air dynamics, mechanics of an elastic body, mechanics of materials, the history of mechanics, etc.

Students who want to enroll in this department must have a good foundation in mathematics and physics.

(3) Astronomy Department (Special course)

Astronomy was the first science to develop. It studies the structure of heavenly bodies, their birth and development, their position in space, and their physical characteristics and chemical composition. Its functions in socialist construction are:

(1) To calculate time and to set up the calendar, to set up a time standard, to serve the transportation enterprises and the scientific laboratories that require the precise calculation of time.

(2) To survey the parallels of latitude and longitude as well as geographical direction, to draw precise maps for aviation and navigation, and to survey the earth (study the form and size of the earth).

(3) To study the physical movement and development of all the parts of the universe which we can observe; to supply new data on the conditions of matters not yet seen by the ground laboratories; and to reveal the principles governing the movement of the universe so that we may get a correct view of it.

Therefore, the purpose of the astronomy department is to train experts in the following 3 fields:

(1) Making the calendar; surveying parallels of latitude and longitude and geographical direction;

(2) Astrophysics, observation and research into theoretical astronomy.

(3) The astronomy teachers for the departments of astronomy, mathematics, meteorology, and geography and others in the universities, and for mathematics, physics and other departments in teachers' colleges.

The fundamental courses of this department are: analytical mathematics, analytical geometry, advanced algebra, differential equations, function of complex variables, theoretical mechanics, mathematical physical equations, general physics, and theoretical physics. Special courses in this department are: general astronomy,

surveying and observation of heavenly bodies (including spherical astronomy), mathematical astronomy, astrophysics, mechanics of heavenly bodies, advanced earth surveying, history of astronomy, astronomy field work, etc.

Students who want to enroll in this department must have a solid foundation in mathematics and physics.

(4) Physics Department (Special course)

Physics is a fundamental science. It studies the most fundamental and most general characteristics of matter. Physics is very closely related to the other natural sciences like chemistry, astronomy, geology, geography, biology, etc. It is a multitechnic science; this is especially true of the foundation of the various engineering theories, like mechanics, electricity, telecommunication, civil engineering, aeronautics, etc, as well as agriculture and medicine. All of these require a knowledge of physics. In actual production technique, as in research on various materials, the examination of products, mine surveying, the design and improvement of the production process, etc, must also use knowledge in physics. Moreover, the design, production, and use of modern defense instruments are again inseparable from physics. During the period of socialist construction in China all the sciences and technology should be integrated to secure the best development. Physics, as the basic science for such developments, occupies an important position, and urgently needs development.

The goal of the physics department is to meet the many needs mentioned above, to train for China research workers for scientific research organizations, industrial and defense departments, and to train teachers for higher institutions of learning and the middle schools.

Besides courses in political theory, advanced mathematics, and general chemistry, this department offers the following main courses: general physics; on the basis of this course the student can proceed to the following 4 theoretical courses: theoretical mechanics, thermodynamics and statistics in physics, electric dynamics, quantum mechanics. At the same time that the student takes these courses he will work in the general physics laboratory and the special laboratory. At the end students must major in some specialty either in theoretical physics, solid physics (including metal physics, semi-inductor research, magnetism, etc), light (including geometrical optics, applied optics, etc), electronics (including electronic emission, electronic optics, gas induction, electric vibration, electronic survey, etc), sound, physics of the earth's crust, etc. In every specialty there are several theoretical or experimental courses.

II. The Science of Chemistry

(1) Inorganic Chemistry Department (Special course)

Inorganic chemistry is a science that studies the characteristics of elements, the principles governing reactions between them, and the application of all the elements and their compounds excluding organic compounds.

China is richly endowed with mines: the black metals including iron and manganese, etc; nonferrous metals including copper, aluminum, lead, zinc, tin, antimony, etc; and especially rich in the rare elements needed for special steels, elements like tungsten, and molybdenum, and catalyzors needed in chemical heavy industry like vanadium and thorium. To work in the metallurgy of these minerals one must know the characteristics of these elements

thoroughly. In accordance with the great over-all plan, metals, acids, alkali, and other products of inorganic heavy industry are not alone in having a great future. The production of nitrogen, phosphorous and potassium fertilizers needed by agriculture, and the silicic acids needed by fundamental construction, must be pushed forward vigorously to assure that they too will be widely applied in the future. To solve the problems encountered in socialist industrialization one must master inorganic chemistry.

The goal of the inorganic chemistry department is to train research experts in theory and in practical technique in inorganic chemistry. These experts must have a comparatively more profound knowledge of the chemical elements and the ability to solve problems in inorganic chemistry. After graduation they will do research or teach in scientific research organizations and industrial departments.

The fundamental courses of this department are: mathematics, physics, inorganic chemistry, analytical chemistry, physical chemistry, chemical techniques, structure of matter, crystallization, colloid chemistry, etc. Special courses at present deal with inorganic compounds and selective reading in inorganic chemistry. Depending on the conditions of the different universities, specialized courses will gradually include the following: rare elements, physical chemical analysis (to determine the alloys present, salt for purification and other problems); chemistry of compounds (applicable to the metallurgy of precious metals and gold plating, etc); isotope chemistry (mainly using the atom to reveal various chemical reaction processes).

(2) Organic Chemistry Department

Petroleum, bituminous coal, wood, and other natural substances are the main materials of modern organic chemistry. On the other hand, liquor, dyes, plastics, explosives, organic acids, power fuel, compound rubber and all medicines are important products of the organic chemistry industry. Organic chemistry studies the characteristics, structure, and application of these organic substances. On the basis of existing scientific achievements, it also studies the production of various kinds of organic chemical products to meet the people's needs. China has great quantities of such natural materials as petroleum, shale, coal, wood, natural gas, etc. During the period of the great socialist construction in China, there are great possibilities for vigorously developing the basic chemical industry and scientific research work has vast possibilities for development.

The goal of the combined universities in establishing an organic chemistry department is to train organic chemistry research experts who have systematic theoretical knowledge and practical technique. It is intended that they will meet the need for cadres in research and practical works. It also trains teachers in organic chemistry.

The fundamental courses in this department are the same as those in the inorganic chemistry department. Special courses are: organic analysis and the theory of organic structure. The specialized courses will establish the following courses according to the conditions in the various universities: organic compounds, petroleum chemistry, coal chemistry, organic analysis, and high molecular chemistry, etc.

(3) Department of Analytical Chemistry (Special course)

Analytical chemistry is a science that studies the composition of substances. It finds out what elements or compounds are in the substance and in what amounts they occur.

The goal of this department is to train research experts in analytical chemistry. These experts must have a systematic theoretical knowledge and practical technique. After graduation they can undertake research work in the scientific research organization and production department or assume teaching positions in higher institutions of learning or in the middle schools.

During large scale industrialization in China along socialist linss geological surveying, the examination of the material, products; semiproducts of all light and heavy industries, and the various construction projects such as those concerned with defense, medicine, and health, agriculture, hydraulics and communication are all closely related to analytical chemistry. At present China needs many research workers and teachers in analytical chemistry. In the past, during the rule of the reactionaries, there were very few experts in this field. Thus there was a great shortage of experts in analytical chemistry in various organizations, factories, and schools. Consequently, we urgently need to train such experts.

The fundamental courses of this department are the same as those in the inorganic chemistry department. The other main courses are: physical and chemical analysis and chemical analysis. Special courses to be initiated are: metal and mineral analysis, differential analysis, etc.

Students who want to enroll in this department besides having a good foundation in chemistry, must also have a good foundation in

mathematics and physics. The color-blind cannot enroll in the department of analytical chemistry.

(4) Physical Chemistry Department (Special course)

Physical chemistry is a science that studies chemical phenomena with physical methods. Its goal is to study the chemical balance, reaction speed, and the relation of the characteristics and structure of the compounds of the production technique. It directs us to use effectively our natural riches, raise production technique, and supply the theoretical foundations of new compounds that reach the demands of standard, during our national socialist construction period.

Physical chemistry includes chiefly chemical thermodynamics, electrochemistry, the structure of matter, etc. Chemical thermodynamics studies chemical balance and mutual balance; chemical dynamics studies in reaction speed, reaction struction, and catalysis; electrochemistry studies in electrolysis, battery reactions and metal corrosion, and other problems; matter structure studies the structure theories of the atoms, particles and the general form of matter and the relation of their structure and their characteristics.

The fundamental goal of this department is to train scientific research workers in physical chemistry. After graduation the students of this department can do research in related scientific research organizations, industrial departments, or factories; or they may assume teaching positions in higher institutions of learning and in the middle schools. The fundamental courses in this department are the same as those in the inorganic chemistry department. Special courses are thermodynamics and molecular chemistry. Specialized courses are chemistry thermodynamics, chemical dynamics,

thermochemistry and element structure, etc. Students who want to enroll in this department must have a good foundation in mathematics, physics, and chemistry.

(5) Colloid Chemistry

Colloid chemistry is a science that studies the colloidal substance and its surface phenomena. Animal and plant colloids, raw rubber, animal and plant fiber, skin, egg white, artificial rayon, soil, and the essential organic elements of living things all are colloids. Therefore the fundamental principle and research methods of colloid chemistry, besides being applicable to agriculture and medicine, are also closely related to industry. For instance, the production of such industrial products as rubber, textiles, artificial fiber, plastics, leather goods, colloids, paper, food, explosives, etc, are all based on the rules of colloid chemistry. Catalysis, absorption, lubrication, pasting wetting, etc, are all surface functions. Such functions as well as the various methods of colloid chemistry are all widely applicable to such industries as mine dressing, the petroleum industry, dyes and medicine production, sugar production, water purification, and cement and ceramics, etc. Consequently, to solve the many modern technical problems encountered in Chinese national industrial construction, we must master the knowledge and technique of colloid chemistry.

The main goal of this department is to train research experts who can master the theoretical knowledge and technique of colloid chemistry. After graduation they can undertake research or teaching in production departments or research organizations.

Besides such courses in political theory like the fundamentals of Marxism-Leninism, the history of the Chinese revolution, political

economics, dialectical materialism and historical materialism, the fundamental courses of this department are: mathematics, physics, inorganic chemistry, analytical chemistry, organic chemistry, physical chemistry, chemical techniques, the structure of matter, etc. Special courses in this department are: surface chemistry, and a course in chemical attraction. Courses to be introduced are: colloids, physical chemistry of the high molecular compound, surface phenomena and the dispersion system.

III. Biology

(1) Zoology Department (Special course)

Zoology is a biological science that studies animals in the natural and domestic state. It is concerned with the classification of animals and with their distribution, physiology, shape and origins and with their relation to human beings. The ultimate purpose of this department is to understand thoroughly how animals live and to reform nature to meet the needs of social developments. China has great resources and vast perspectives for such a task.

The goal of this department is to train zoology research experts and zoology teachers, to undertake a survey of natural resources, to improve the breeding and production of animals and sea products, to control parasites and pests, and to assign teaching assignments for construction in China in order to further develop agriculture, animal husbandry, and the production of goods from the sea, education and health projects for the Chinese people.

This department offers the general ordinary courses of the biology department, i.e.: fundamentals of Marxism-Leninism, political economics, dialectical materialism and historical materialism, physics,

chemistry, geology, introduction to biology, zoology, botany, human anatomy, microbiology, animal physiology, plant physiology, biochemistry, Darwinism, and Michurin genetics; it also offers the following special courses: the organism, embryology, animal husbandry, etc. The following specialized courses will gradually be introduced according to the conditions of the various universities: vertebrates, insects, fishes, embryology, organism, sea products, etc.

(2) Botany Department (Special course)

The task of the botany department is to train survey research workers for scientific research organizations and for agriculture and forestry departments, and teachers for higher institutions of learning and the middle schools.

Cadres trained by this department can systematically make a survey of plant resources, soil utilization and preservation, forest protection facilities, and of useful or harmful lower plants. Due to the important position of field work in this department, students must have enthusiasm for nature and good health.

Besides the general common courses, this department also offers the following special courses: farm soil, the biology of plant growth, the plant nursery. The following courses will gradually be introduced according to the conditions of the university concerned: lower botany, higher botany, physiology of plant groups, etc.

(3) Human and Animal Physiology

This department contains 2 specialized divisions: human physiology and animal physiology. Its final aim is to train scientific research workers and teachers in physiology and biochemistry according to Pavlov's materialist theory.

After graduation students can do scientific research in physiology, biochemistry, and related fields in the Academy of Sciences and in medical and health centers, or they can teach or do research in physiology, biochemistry, or human anatomy in the combined universities, in medical, agricultural, or teachers' colleges, or in the middle schools.

The graduates of this department must master the essence of the Pavlov theory, as it is not only the foundation of physiology but also the foundation of medical science and psychology. Therefore the fundamental special courses of this department are: physiology of higher nerve activity; human and animal physiology; muscle physiology, the central nervous system and the physiology of the senses, the physiology of blood circulation, the physiology of digestion, the physiology of internal secretions, comparative physiology, etc; in biochemistry, egg white chemistry, sugar and fat chemistry, mildew, stimulants, vitamin metabolism, etc. Students can only major in one of the 2 specialized courses.

Physiology and biochemistry requires more knowledge in physics and chemistry. Students in this department, besides taking physics, inorganic and analytical chemistry, and organic chemistry must also take physics and colloid chemistry. Consequently, students who want to enroll in this department must have a solid foundation in physics and chemistry, and good intelligence.

(4) The Department of Plant Physiology (Special course)

To understand the pattern of plant life and its connection with the outside world so that such plant life may be managed according to plan and to control plant growth to guarantee constant improvement in the production and quality of agricultural products

is the fundamental task of plant physiology. On the microscopic level it studies the microorganism, its metabolism, masters its life pattern and improves it so it will be more beneficial to the people's life and health as it occurs in farm soil, industry, and hygiene. This is also the task of the department of plant physiology.

The task of this department is to train research experts in the scientific research organizations and other departments and teachers in higher institutions of learning and in the middle schools.

Besides the common courses, this department also offers the following special courses: physics and colloid chemistry, biochemistry, farm soil, biology of plant growth, advanced plant physiology, plant biochemistry, microbiology, and laboratory work in plant physiology. Students who want to enroll in this department must have a good foundation in chemistry.

IV. The Earth Sciences

(1) Geography

(2) Natural Geography

Geography is a science that helps one understand and reform nature. It is a powerful weapon for human beings in their struggle against mighty nature, for the construction of a happy society. It is closely related to Chinese national economic projects like the survey of natural resources, the survey of rivers, the survey of dam geography, the survey of railroad line selection, the survey of industry distribution, etc. Experts can present concrete proposals based on the results of their survey and research analysis. Therefore, geography is directly related to hydraulics, agriculture and

forestry, the railroad, and industry as well as city contruction.

The goal of this department is to train for China research experts in scientific research organizations, geography survey research experts in industrial departments, and teachers for higher institutions of learning and for the middle schools.

The fundamental courses of this department are: advanced mathematics, physics, chemistry and biology, the general theory of natural geography, surveying, geology, meteorology, hydraulics, astronomy, geomorphology, plant geography, the map, Chinese and foreign natural geography, Chinese and foreign economic geography, etc. To enable the students to work better for Chinese national economic construction and for reforming nature, the geography department also offers the following specialized courses: economic geography -- including industrial geography, communication geography, the field survey of economic geography; geomorphology -- including tectonic geology, geology of the fourth century, field survey of geomorphology, etc. The special sources in natural geography and plant geography also have their respective special courses.

In the teaching plan of these 2 special courses (of this department), field works in teaching and production occupy a greater proportion. Every school year includes 6 or more weeks of field work.

Students who want to enroll in this department must have a good foundation in the natural sciences and good health, so they may endure long periods of field survey work.

(3) Geology Department

Geology is a science that studies the earth. It studies the composition and distribution of substances inside and outside the earth; the formation, change and development pattern of minerals, rocks, and mineral beds; the structure and shape of the earth; the laws governing changes on its surface; the change and development of prehistoric life; and the entire history of the earth. At the same time, geology is also closely integrated with production and practice. If one can master the laws governing various kinds of geological changes and geological theories one can direct the survey and discovery of minerals, the construction of communication and hydraulic structures, the improvement of agriculture and forest soil and the great enterprise of the artificial reformation of nature.

The goal of this department is to train for China geological scientific research experts who have a thorough foundation in theory, teachers for higher institutions of learning, and research workers for geological survey departments.

Besides such political theoretical courses like the history of the Chinese revolution, fundamentals of Marxism-Leninism, and dialectical materialism and historical materialism, the main and special courses of this department are: advanced mathematics, physics, general chemistry, analytical chemistry, theoretical chemistry and colloid chemistry, organic chemistry, zoology, botany, general geology, crystallography, mineralogy, petrology, prehistoric life, geohistory, kinetic geology, Chinese geology, mineral deposits, fourth century geology and geomorphology, hydrogeology, and other special courses. Every summer from the sophomore year on there is a period of field training which lasts more than one month. Its

purpose is to integrate theoretical studies with practical geological work. Because the development of modern geological science is based on physics and chemistry, and many of the works after graduation emphasize practical field observation, students who want to enroll in this department must have a good foundation in the natural sciences and good health.

(4) Meteorology Department

Meteorology is a science that studies the physical phenomena and physical changes in the atmosphere. Various construction projects such as those for defense, industry, mining, communication, construction, agriculture and forestry, and city planning all require the control of the weather. If construction work is to proceed correctly national weather forecasts by meteorological workers are needed for a period of several hours to over a year. In scientific meteorological research the fundamental principles of meteorology and weather conditions in China and the laws governing changes in them all need to be investigated with concrete research work. Besides, many teachers in meteorology are needed in the meteorology, hydraulic, agriculture and forestry, geography, oceanography, military engineering, navigation and aeronautics departments in higher institutions of learning and in middle technical schools. Meteorological experts are needed everywhere but China seriously lacks them. There are far too few to meet construction needs in various fields.

To meet these construction needs primarily the need for meteorologists in various fields the meteorology department has the task of training experts thoroughly in the mathematics and physics of meteorology. This will enable them to undertake practical tasks. The main courses in the first 2 years are: mathematics, physics,

mechanics, the wireless and meteorology (atmospheric physics). From the junior year on emphasis is laid on special courses in meteorology in close integration with production field work. This is to train the students ability to work independently.

This department also offers a 2-year meteorology course; its aim is to train many practical workers to do weather forecasting.

Students who want to enroll in this department must have a good foundation in mathematics and physics and must be politically well qualified.

(5) Physical Oceanography Department

Physical oceanography is a science that studies the physical phenomena in the ocean and its laws. It is important for building up Chinese production and defense construction. For example, if we can clearly understand the changes and the position of the tide on our coasts and harbors, we cannot only protect incoming and outgoing ships from the harbors or the coasts, we can also supply the data necessary for harbor and coastal construction. If we can understand the currents caused by changes in the tides and can master their direction and speed we cannot only significantly help to direct ships, but we can also help fishing boats to navigate. Forecasts of the direction currents will take help protect the transportation of products from the sea; while survey work and statistical research on coastal waves can solve difficult problems in harbor construction planning. The distribution of the currents and the laws governing their change not only directly influence the weather on the ground, but also decisively influence the growth of sea animals and how the fishes swim. At the same time, it also greatly assists defense considerations on navigation safety. Moreover, the

distribution and change in the physical characteristics of sea water (temperature, salt, transparency, etc) are also the chief reference data for the study of oceanography. Obviously if we cannot master the laws governing changes in the physical phenomena of the ocean, we will certainly encounter difficulties and incur damages in establishing defenses and developing the rich resources of the ocean.

The study of the oceans must begin with surveying. Therefore, the goal of this department is to train experts who will have a definite scientific theoretical level in oceanography and expert surveying experience. They must be able to plan and prepare an ocean survey, carry out practical observations, organize and analyze the results of their observations, develop research work, discover laws and forecast on the basis of the surveys and analysis. China has a long coastal line boarding on the vast ocean. But there are only a few scientific workers in oceanography. Hence, there is an urgent need to develop scientific education in oceanography, to develop the rich resources of the ocean, and to establish creative defense conditions.

The main courses of this department are: general physics, advanced mathematics (a good foundation in mathematics and physics is a prerequisite for the special courses), mechanics and fluid mechanics (an understanding of mechanics and the fundamental ideas of fluid mechanics is the theoretical foundation for the study of the mechanics of ocean waves and tides), the general theory of the ocean (to understand the position of the tides, the cause of the currents and the rules of their changes), weather (an understanding of the cause of weather changes and the study of the analysis of weather and the weather forecast are the prerequisites for the study of storms, currents, and wave currents), wave studies (the study of

the kinetic theories of waves, discovering the relationship between storm and waves from the formation, moving, and diminishing of the waves, for the forecast of waves), ocean mechanics (the study of the kinetic theory of the flow of the ocean, discovering the laws governing changes in ocean speed and direction from meteorological factors and the oceans themselves, thence to the study of forecasting methods).

Students who want to enroll in this department must have a definite political quality, a solid foundation in mathematics and physics, and good health.

GOVERNMENT AND LAW

(1) China has entered a new historical period. All her people, under the direction of the party and chairman Mao, are struggling for the gradual realization of national socialist industrialization and the gradual socialist reformation in agriculture, handicraft, and capitalist industries to make China a great socialist country. To carry out this general task, every project in China must serve this purpose, and follow its direction. Consequently, "under such conditions, the government of China and China's laws serve not chiefly to carry out a social reformation like the one carried out in the past. Rather, they serve to gradually perfect and utilize the people's democracy to further strengthen the people's democratic autocracy. At the same time they serve to push to completion certain incomplete social reforms. This is to assure that economic construction and various socialist reforms will proceed successfully and to assure the democratic rights of the Chinese people against infringements." (Report by Mr. Peng-Chen, vice director of the political law committee of the state council, to

the twenty-seventh conference of the central committee of deputies of the people's government.) To accomplish this we must train sufficient government and law cadres and law experts, who are devoted to socialist construction, who have a definite thinking level in Marxism-Leninism, who can master advanced theories in government and law, who have a fundamental knowledge of our national policies and legislature, and who are in good health. This will be the fundamental task of the Chinese higher education in government and law from now on.

(2) In the past several years various government and law schools and departments have carried out necessary reorganization on the basis of a series of movements in school reorganization and in ideological and judicial reform. Such reorganizations made these schools and departments socialistic higher institutions of learning which were raised qualitatively and thus became suitable for the preliminary training of qualified government and law cadres. At present in China the following combined universities have a law department: the Chinese People's University, the Northeast People's University, and Wuhan University; the Northwest University offers a short course in law; besides, there are 4 independent government and law schools: Peking, East China, Mid-South, and Southwest. To meet the need of training government and law cadres according to planning in the summer of 1954, a law department will be opened in Peking University and Futan University. All these schools and departments concretely proceed with different divisions of labor under the general goal of training government and law cadres on the basis of China's needs. The law department of the combined universities offers a 4-year course for training experts for the court, the prosecutor's office, the lawyers' association, and the public notary office.

In this course it also trains legal experts for other national organizations and some teachers and research experts. To meet the immediate and urgent needs of the government and legal works, the government and law schools generally offer a 2 to 3-year course. After graduation students are assigned to the courts and prosecutor's offices for practical work.

(3) In the past several years, in accordance with China's general enrollment plan and through the centralized method of distribution, many young students have taken studies in the department concerned with government and law. Soon they will undertake tasks in government and law which have been entrusted to them by the people. In 1954, 2,000 more middle school graduates will be absorbed into the various law departments of the different combined universities and government and law schools to acquire a scientific knowledge of government and law.

But at present some young students still do not sufficiently understand the function and significance of the work in government and law during the period of Chinese national construction. They think that once the country enters the construction period the significance of works in government and law will diminish. Some others despise work in government and law. Still others maintain that "Men study engineering; women study medicine" while "the less qualified take government and law," and do not enroll in the government and law schools. All these viewpoints are incorrect. The socialist construction of China is an organic whole. The works of the various departments are interrelated and inseparable. Of course to concentrate on the development of heavy industry in order to speed up socialist industrialization many industrial construction experts are needed. Comparatively more young students are absorbed into the

study of industrial technology. But this is not to say that departments of government and law are not important, that they do not need students, that the subject matter they offer does not merit study. As chairman Mao said: "Our present task is to strengthen the people's national machinery, the most important part of which is the people's army, the people's police, and the people's court. These make us capable of defending ourselves and protecting the people's welfare. If this is done China under the direction of the workers and the communists can change from an agricultural country to an industrial country; she can change from the new democratic society to the socialist society and communist society with the extermination of the classes and the realization of the universality of mankind" (Essay on the People's Democracy by Mao Tze-tung). Comrade Stalin had also taught us that "during the period of construction, antisubversive organizations, the army and other organizations are as necessary as during the period of the internal class war. Without such organizations, autocracy cannot promote the guaranteed construction projects" (Problems of Leninism). In the past 4 years, due to the correct leadership of the party and chairman Mao, the strengthened machinery of the nation has fought against internal and external enemies; fundamentally exterminated the remnant antirevolutionaries on the mainland; established order for the new society; strengthened the people's democratic autocracy; promoted and accomplished various kinds of social reform movements; protected the people's rights; assured that the reconstruction of our national economy would be completed; and created possible conditions for socialist society and for the further realization of socialist industrialization. All these effectively prove that works in government and law are essential for strengthening the revolutionary victories and for developing

construction projects. From this it is obvious that after China had entered the period of socialist construction we not only should not weaken works in government and law but should, on the contrary, strengthen them. Only then can we protect the successful progress of socialist construction in China during the transitional period. Consequently our training in government and law should increase proportionally year by year so that we will attract young students of high caliber to study at the government and law schools.

Perhaps some of our youth despise work in government and law partly because they believe that to study government and law is "inglorious" and offers "no prospect." In the old society, politics and law were tools for controlling the people. The old government and law schools were designed to train the sons of landlords, bureaucrats, and capitalists, to prepare them to be subordinates of the reactionary rule, to oppress the people and to maintain the reactionary regime that aimed solely to exploit. Thus it is very understandable that people despise work in government and law and do not want their sons to undertake such work. However, due to the victory of the Chinese revolution the people's democratic autocracy is established; work in government and law no longer serves to exploit the people. During the land reform movements, antirevolution, "three-anti's," and "five anti's," all our governmental organizations have supported the people's struggles. From now on, they are going deeper into factories and mines, into farm mutual aid groups and cooperatives, into other various economic organizations, to work for the economic construction. Therefore we must at present pay more respect to people's works in government and law, in order to develop their greater effects.

(4) Our education in government and law must follow the advanced legal theories and legal education experience of the Soviet Union. These must then be gradually adapted into the practical conditions of China so that we may create our own scientific legal system and government and law education system. To attain the above goals the department of higher education is studying methods of further strengthening education in government and law with the related departments. We believe that from now on under the correct leadership of chairman Mao, with the common efforts of all the teachers and students of the government and law schools, following the development of our national economic construction, our education in government and law will be constantly strengthened and developed.

Young students! We hope you will endeavor to raise your political thinking level, that you will set out with the welfare of the whole country at heart, that you will correctly recognize the importance of work in government and law, and that you will correctly select your subject according to your abilities and interests. We hope a group of excellent young students will enroll in government and law schools this summer.

We sincerely hope that students majoring in government and law will make great progress in the areas of study they choose.

LAW DEPARTMENT

The chief goal of the law department is to train legal experts to meet China's needs during the transitional period and while we are occupied with the current tasks of government and law. These experts should have fundamental training in Marxism-Leninism and should have a knowledge of legal matters. They are to work in judiciary organizations,

prosecutor's offices, lawyers' associations, public notary offices, and other governmental administrative organizations. The purpose of this department is to train legal theoretical research workers for practical organizations and teachers for higher institutions of learning.

The main courses of this department are: fundamentals of Marxism-Leninism, political economics, dialectical materialism and historical materialism, history of the Chinese revolution, national and legal theories in Marxism-Leninism, the history of national and legal rights, the national constitution, civil law, criminal law, administration law, labor law, court organization, criminal procedure, civil procedure, land law, crime control, finance law, international law, Russian, etc. To provide students with opportunities for further research and to make it possible for them to master some of the main courses on the basis of a general knowledge of some special field, the law department of the Chinese People's University from the senior year on is divided into 4 specialized courses: the theory of national and legal rights, the national constitution, civil law and criminal law. This has been arranged to allow a student to specialize in one course and in 2 other courses closely related to it. Senior students can also select the following courses: history of political theories, international private law, legal medicine, law and mental disease, etc.

This department offers a 4-year course.

Students who want to enroll in this department must have acquired a definite knowledge of political theory and the cultural level of a high school graduate; he must also be in good health. Work experience can be considered as part of the cultural level.

GOVERNMENT AND LAW DEPARTMENT

According to the demands of the general task of our national transitional period, the task of government and law is to further perfect the people's democratic system, strengthen the people's democratic legal system, solidify the people's democratic autocracy, and protect the successful proceeding of socialist economic construction and social reformation. Our internal and external enemies will never accept their own death and will utilize every opportunity to destroy the people's enterprises. Thus to protect our national economic construction from aggression and subversion, the government and law must openly fight hidden anti-revolutionaries, antisocialist reformers, illegal capitalists, the corrupt, thieves, workers who have violated labor legislation, and all the other criminals who disturb our national economic, cultural construction and the people's democratic rights. Such are the difficult tasks before us. Consequently, work in government and law must be strengthened, not weakened.

To guarantee the successful accomplishment of this task and to systematically promote the fundamental theories of Marxism-Leninism and Mao Tze-tung's ideas with emphasis on the practical application of theoretical principles, this department trains healthy government and law cadres who are devoted to socialist enterprises. It provides them with an understanding of Marxism and Leninism and makes it possible for them to obtain fundamental knowledge in national policies and laws. At present this department's chief task is training cadres for court and prosecutor's offices in a one to 2-year course.

The main courses of this department are: dialectical materialism and historical materialism, the history of the Chinese Communist Party, political economics, the ninth to twelfth chapters

of the history of the Communist Party of the Soviet Union, the general policy and general task, theories of national and legal rights, the national constitution, civil law, criminal law, the law of civil procedure, the law of criminal procedure, marriage law, labor law, judicial construction, prosecution organization and tasks, numerous individual laws, Russian, Chinese, etc.

Students who want to enroll in this department must have the considerable political awareness and devotion to work needed for the active realization of a socialist society, for strengthening the people's democratic autocracy, and for protecting economical construction (the judiciary short course is the same as this department).

THE DEPARTMENT OF THE HISTORY OF INTERNATIONAL RELATIONS AND THE DEPARTMENT OF INTERNATIONAL LAW

In the great struggle the Chinese people are carrying on to carry out the general policy of the transitional period, diplomatic work is also very important because we must rapidly realize our national socialist industrialization and socialist reformation in peaceful and unthreatening international conditions. The glorious task of diplomatic work is just to endeavor to establish international conditions for creating peace and various beneficial international conditions, in order to guarantee the successful realization of the general line of the transitional period.

At present the diplomatic division (foreign affairs department) of the Chinese People's University includes an international relations department and an international law department. Both offer a 4-year course.

The task of the international relations department is to train experts for diplomatic work and for research in the history of international relations. In addition to courses in political theory like fundamentals in Marxism-Leninism, political economics, the history of the Chinese revolution, dialectical materialism and historical materialism, the main fundamental courses and special courses are: a general history of China, a general history of the world, political economic geography of the world, the national constitution, the foreign policy of the Chinese People's Republic, international law, history of international relations, etc. This department also offers courses in special problems encountered in the history of international relations, special international problems (of the United States of America, England, India, etc), and special problems. The foreign languages of this department are Russian, English, and French (the student must choose one). The foreign language course is an important one in the entire teaching plan.

The task of the international law department is to train research experts in diplomatic work and international law. The fundamental courses, theoretical courses, foreign language courses, and diplomatic courses of this department are generally the same as those of the department of the history of international relations (but differ in proportion to the latter). This department also offers special courses in international law: international private law, international public law, special problems in international public law, special problems, etc.

Requirements for enrollment in the above 2 departments are: (1) one must be a high school graduate with a good record (practical working experience can be considered part of cultural training);

(2) one must be progressive in political thinking; (3) one must be in good health.

FINANCE AND ECONOMICS

Within a few short years after the liberation, following the reformation and development of all higher education, higher education in finance and economics changed significantly. During the 2 large scale reorganizations of schools and departments made in 1952 and 1953 to prepare for further development, the finance and economics departments were also reorganized and concentrated. Since the facilities of these departments have met the demands of Chinese national construction, they have now turned to the stage of carrying out reform in teaching. They all present a new look under the general demand of the strong socialist strength.

At present there are 18 higher institutions of learning that have a finance and economics department: 6 higher institutions of finance and economics: the Mid-South Finance and Economics College, Shanghai Finance and Economics College, Szechwan Finance and Economics College, Peking Foreign Trade School, Northeast Statistics and Accounting School; 10 combined universities: the Chinese People's University, Peking University, Nanka'i University, the Northeast People's University, Futan University, Amoy University, Wuhan University, Szechwan University, Northwest University, Lanchou University; and one higher institute of technology: Peking Railroad College. The Chinese People's University is a brand new university founded with the direct assistance of experts from the Soviet Union. It has the greatest number of departments in finance and economics. The 4 finance and economics colleges are newly founded after the reorganization of schools and departments. They are like combined

finance and economics colleges. The 2 colleges were founded separately to meet the needs of the central foreign trade department and the central heavy industry department. In the combined universities, besides several of them which temporarily have a finance and economics department, the others only have an economics department. To meet the need of the central railroad department, the Peking Railroad College offers railroad economics department.

To meet the nations needs for experts the Chinese People's University from its very beginning adopted the advanced experience of the Soviet Union and established departments. The other colleges and universities have also set up departments one by one. At present, in their 4-year course, the colleges and universities have established the following 14 departments: political economics, people's economic planning, industrial economics, finance, money and credit, statistics, accounting, foreign trade, domestic trade, supply and consumer cooperatives, producers' cooperatives, factory management, railroad accounting, and railroad statistics. To meet the needs of national construction, after this summer, the department of agronomics is going to be offered. Due to the difference in years of study by the original departments of the different universities, the current duration of study required by the different departments of the different universities differs. Some require 3 years of study, some, 4. From now on the duration of study will be unified according to the goal of training.

The advanced department of finance and economics has a very glorious task. Under the enlightened guidance of the general policy, it will train tens of thousands of healthy experts in economic theory and in advanced finance and economics for the industrialization of China along socialist lines. It will provide them with a knowledge

of Marxism-Leninism and will teach them to master economic theories and to understand various aspects of finance and economics. In short, it trains experts in economic planning for our national planning board; industrial economics experts for industrial departments and factory and mine enterprises; agronomists for the agriculture department, farm cooperatives and agriculture enterprise; special experts for finance, trade, cooperatives, banks, etc; and statistic and accounting experts for the various financial and economical departments and mines. The political economics department of the universities aim to train teachers and research workers in political economics. To assure that the above experts will be trained all the departments set up their concrete teaching plan according to their different training goals. The teaching plan provides that students must study such political theories as fundamentals of Marxism-Leninism and such other topics as the history of the Chinese revolution, political economics, etc; fundamental courses in economics and special courses in finance and economics. It also states that students must spend a definite period in field work in mines and factories.

This year is the second of Chinese planned construction on a national level. Since national construction is planned the training of experts for national construction must also be planned, otherwise the general plan for China cannot be accomplished, and our national construction plan cannot be completed. In training various kinds of construction experts we are chiefly concerned with training many industrial technical experts. But at the same time to meet the needs of industrial construction and the needs of the different departments of the people's economy we must also train a certain number of experts in economic management. Socialist construction depends

on accurate planning, precise and organized supervision of the administration of the plan, and on the strict execution of economic reviewing. These tasks cannot be completed without a certain number of qualified economists specializing in management. For close integration in national industrialization, various kinds of finance and economics experts should be trained according to the needs and according to the areas in which they are needed. At present we should emphasize the training of industrial economists, statisticians and accounting experts for various industrial departments, factories, and mines. To raise the political and working level of existing cadres, to increase their effectiveness in their work, from now on, during definite periods, if the various conditions of dormitories, teachers, and facilities permit, the various finance and economics colleges should offer special courses or training courses to the working cadres for the various departments. Such a task is certainly important. The chief task of the Chinese People's University is to train cadres of workers and farmers. So far, it has made great strides in doing this. Hence, it is going to continue to enroll many cadres of workers and cadres among the farmers.

The training of any type of expert is closely connected with national construction and with national industrialization. Moreover, various kinds of economic experts are needed for national economic construction. Therefore, it is incorrect to maintain that education in finance and economics is not important. Some students do not want to major in finance and economics; they prefer engineering. Some even maintain that it is worthless to study finance and economics. Such attitudes are due to a failure to understand national construction as an organic whole and to understand that

national construction needs various types of experts, with an accurate division of labor yet with a close integration between these divisions. They only see that China needs industrial technical experts; they do not see that she equally needs managers and administrators. To major in engineering is, of course, good; but it is just as good to major in finance and economics. All studies are good if China needs them. Those who do not consider national needs at all but only think of personal interests and personal benefits and maintain that to major in finance and economics is worthless are to be criticized; it should be thoroughly determined why they despise majoring in finance and economics. One of the students of the finance and economics college, after having studied the general policy and having been educated in devotion to his special field, realized that national construction and the training of construction experts are both well planned. He even pointed out that "If everybody prefers engineering to finance and economics our national planning will be destroyed." Consequently, he learned devotion to his special field and increased his enthusiasm for his studies. Such a realization is correct.

After the reorganization of the colleges and departments all the finance and economics departments began to learn from the advanced teaching experience of the Soviet Union. They formulated new teaching plans, began to adopt new teaching guides and materials, established research or teaching groups, and gradually improved their teaching methods. Meanwhile, the ability of the teachers of the various colleges and departments is also increasing. In the past several years the various higher institutions of learning have had more than 200 teachers to teach courses in political theory and special courses in finance and economics. They are either teachers who

have returned after having studied under the direction of Soviet experts in the Chinese People's University, or graduate students trained in the Chinese People's University. At present graduate students in the various finance and economics departments in the Chinese People's University still total more than 500. The work and study discipline of the students and teachers in the various universities are being strengthened day by day. Everyone endeavors hard to better serve national construction along socialist lines with hard work and dilligent studies. All these are very good. To meet the demands of the general policy still more efficiently, the department of higher education is studying how to strengthen the advanced finance and economics education with the related departments.

Like all higher institutions of learning, the finance and economics department, following the development of Chinese national construction, will constantly develop and solidify so that it can train many useful experts for national construction along socialist lines. Students ready to enter the finance and economics department, the future glorious task is calling you!

I. Economics Department

Political Economics Department (Special course)

Political economics is a science that studies production relationships in human society; that is the development of economic relationships. It explains the rules governing production and personal and production consumption distribution during the various stages in the development of human society. It also analyzes the reasons for the ultimate downfall of the capitalist system, explains the theories that establish socialist and communist society,

and integrates the general line of the party during the transitional period to analyze China's important policy and task in current economics.

The department of political economics aims to train scientific research workers in political economics and teachers in higher institutions of learning.

Besides such courses in political theory like fundamentals of Marxism-Leninism, the history of the Chinese revolution, dialectical materialism and historical materialism, this department also offers the following fundamental courses: the history of the Chinese people's economy, the economic history of the modern world, economic geography, statistics, principles of people's economic planning and the following special courses: political economics, history of economic theories, capitalism, etc. The duration of study is 4 years.

Students who want to enroll in this department should have a solid foundation in the social sciences and should be intelligent. This department also requires that its students have a high level of political understanding.

People's Economic Planning Department

People's economic planning is one means of managing the people's economy in socialism and in the period of the transition from capitalism to socialism.

"People's economic planning" is a new economic science. It is the conclusion and one of the fruits of the socialist construction experience of the Soviet Union. It studies mainly how we in China can achieve centralized economic planning, how we can make various

sections of the economy such as industry, agriculture, trade transportation and fundamental construction develop rapidly in mutual adjustment and integration in a definite direction. These things we must do if we are to carry out the general line and various economic policies in the transitional period of the (Chinese Communist) party and China, if we are to reach our goal -- the establishment of a socialist society. People's economic planning is a weapon of the party and the country in establishing socialism. Therefore, to train planning cadres and to study the planning experience of the Soviet Union is important for carrying out the general line for the transitional period in China.

The task of the people's economic planning department is to train higher experts for people's economic planning. It trains planning cadres on the governmental department level for the national planning committee, the planning organizations of the big administrative areas, provinces, and cities. But the training of planning cadres for the basic industries, bureaus, and sections is not the task of this department.

Besides such courses in political theory as fundamentals of Marxism-Leninism, political economics, the history of the Chinese revolution, the main courses of this department are: Russian, a history of the Chinese people's economics, economic geography, industrial technology, industrial organization and planning, economic statistics, economic activity analysis, principles of people's economics, people's economic balance schedule, capital goods balance schedule, people's economic planning, organization and technology, etc.

One must study for 4 years to complete the courses in this department.

Students who want to enroll in it must have a good foundation in Marxism-Leninism and political economics and they should have a good understanding of political matters.

Department of Industrial Economics

Industry is the guiding part of the people's economy and the material foundation of socialist society. Industrial economics is an economic science that studies industry. When China has entered the great period of socialist industrial construction majors in this department will be very important. This department studies how to concretely direct national industrialization, the principles and methods of industrial management, the design, budgeting, and planning of fundamental industrial construction, the utilization of industrial fixed capital and circulating capital, and the concrete planning and organization of the supply of industrial materials, wages, and cost, etc.

The task of the industrial economics department is to train higher experts in industrial economics, to provide them with technical knowledge in industrial production, especially knowledge in industrial enterprise and management and in the planning of industries. The graduates of this department can directly undertake economic tasks in the various industrial departments, bureaus, and enterprises of China.

Besides such courses in political theory as fundamentals of Marxism-Leninism, political economics, the history of the Chinese revolution, the main courses of this department are: mathematics,

chemistry, physics, Chinese economic geography, Russian, technique in statistics, principles of mechanics, important industrial technology, people's economic planning, industrial economics, statistics and industrial statistics, industrial bookkeeping, the analysis of economic activity, industrial organization and planning, etc.

To complete the program of this department one must study 4 years.

Students who want to enroll in it must be in good health, must have an understanding of political theories and must have the cultural level of high school graduates. It would be desirable if they had a general knowledge of production.

Agronomy Department

The task of the agronomy department is to train higher experts for the socialist reformation and reconstruction of Chinese agriculture. The graduates will manage and administer state farms, machine and tractor stations, and collective farms, and do planning work in the agriculture department, etc.

Besides such courses in political theory as fundamentals of Marxism-Leninism, political economics, the history of the Chinese revolution, etc, the main courses and special courses of this department are: mathematics, Russian, Chinese economic geography, the history of the Chinese people's economics, accounting auditing, finance and credit, agronomy, farm organization and planning, agricultural statistics, etc.

To complete the program of this department one must study 4 years.

Statistics Department

Marxist-Leninist statistics are a powerful weapon for understanding society (as such), a powerful assistant in national administration, and a very powerful instrument for the national supervision of any construction project and planning. Due to the development of economical planning work in statistics should be vigorously strengthened in the socialist construction of China. The science of statistics must show us how to understand current developments and trends in national economics and culture, must help us formulate economic plans, must supply scientific data for making decisions affecting the policies which will guide us in the future, will help us examine and supervise the execution of national planning. The science of statistics studies and analyzes how the various departments of the people's economy have fulfilled the plan; it studies the problems involved to discover hidden strengths, to propose methods for improvement of procedures, and to promulgate advanced experience.

The task of the statistics department is to train advanced experts in statistics for work in the industrial construction and development of agriculture and trade during socialist construction in China.

This department is divided into the following 3 specialized courses: industrial statistics, agricultural statistics and trade statistics. Besides such courses in political theory as fundamentals of Marxism-Leninism, political economics, the history of the Chinese revolution, the basic courses and special courses in this department are: the history of the Chinese people's economy, fundamentals of national and legal rights, Chinese economic geography, mathematics,

Russian, principles of accounting auditing, finance and credit, people's economic planning, people's economic balance schedule, principles of statistics, economic statistics, statistical drawing, etc. Courses in the special industrial statistics curriculum are: industrial technology, industrial economics, industrial accounting auditing and analysis, industrial statistics, etc. Courses in special curriculum on agriculture statistics are: geophysics and plantings, animal husbandry, agronomy, agriculture bookkeeping auditing and analysis, agricultural statistics, etc. Courses in the specialized course on trade statistics are: commodities, trade economics, trade bookkeeping auditing and analysis, trade statistics, etc.

To complete the program of this department one must study 4 years.

Accounting Auditing Department

Accounting auditing is an organic part of people's economic accounting. It is based on the theories of Marxism-Leninism and uses systematic methods to reflect, supervise, and direct the economic activities of the various departments in China.

Comrade Stalin had directed that: "Without accurate auditing, any construction work, any work of the government, and any planning work is unimaginable." The main task of accounting auditing is to protect the execution of socialist assets and supervision planning. With the development of our national planned, grand scale economic construction, accounting should be utilized more fully in order to strengthen the economic auditing system, lower the cost of the products, and guarantee the rapid speedy accumulation of capital for socialist industrialization. Consequently, accounting auditing is a powerful weapon for making China a great socialist country.

The goal of the accounting auditing department is to train higher accounting auditing experts for national socialist construction.

Besides such political theory courses as fundamentals of Marxism-Leninism, history of the Chinese revolution, dialectical materialism and historical materialism, this department also offers the following fundamental courses: people's economic planning, principles of statistics, finance and credit, fundamentals of national and legal rights, and the following special courses: principles of accounting auditing, accounting auditing of the main departments of the people's economy (including industry, fundamental construction, trade, agriculture, etc), economic activity analysis, examination and supervision.

This department can also offer these specialized courses: trade, industry, and agriculture. Besides the above courses, every specialized course has its special courses. For instance the special course in industrial accounting offers the following courses: industrial economics, industrial organization and planning, industrial statistics, techniques in the main industrial departments, industrial calculation, analysis of special problems.

Finance Budgeting Department

Courses in finance and national budgeting aim to give students an understanding of the characteristics and tasks of the new China, try to make them understand how China follows the construction experiences of the Soviet Union, and how she utilizes finance and budgeting to realize national socialist industrialization. At present China is just in the stage of socialist construction and socialist reformation. To carry out our national socialist

industrialization steadily, we must accumulate capital and have definite financial resources. The accumulation and possession of capital mainly depends on financing and budgeting. To steadily carry out the socialist reformation of China in agriculture, handicrafts, and in the industries of private capitalism, to make China a socialist country finance must assuredly struggle to strengthen the socialist economic system.

The finance and budgeting department is divided into 2 specialized courses: finance and budgeting. The specialized finance course trains higher special experts for national finance administration (e.g., administration of taxes and economical construction finance); specialized courses in budgeting train highly specialized experts for budgeting management (e.g., planning, compiling, and means of execution).

The main courses of this department contain the following courses in political theories: fundamentals of Marxism-Leninism, political economics, the history of the Chinese revolution; and the following fundamental and special courses: Russian, mathematics, history of the Chinese people's economy, Chinese economic geography, principles of statistics, industry, agriculture, trade economics, finance, bookkeeping auditing, national budgeting, etc.

To complete the program of the finance and budgeting department one must study 4 years.

Money and Credit Department

National banks and special banks are an important part of the people's economy. The national bank (the Central Bank) is the central organization for organizing the circulation of money, short term

credit and the final account. It is an essential link in realizing the general policy and the general task of the transitional period by means of the 2 economic axes of credit and money in the people's democratic autocratic country. Special banks (like the Communication Bank and Northeast Fundamental Construction Investment Bank) is the finance appropriation organization for fundamental construction by China. In the processes of appropriation, the special banks also supervise the whole progress of the fundamental constructions. Following the large scale expansion of national industrialization along socialist lines their tasks become more important day by day. Therefore, works in the national bank or in special banks are all the most glorious working posts in the construction of socialism.

The money and credit department is divided into 2 specialized courses: short term credit and long term credit. The goal of the short term credit course is to train top level experts for the national bank; the goal of the special long term credit course is to train top level experts for investment banks concerned with fundamental construction.

Students in the money and credit department should study such political theory courses as fundamentals of Marxism-Leninism, political economics and the history of the Chinese revolution. The main special theoretical courses of this department are: money circulation and credit and finance. These 2 courses comprise the science that studies money, credit, and finance theories -- people's economic planning, industrial economics, agronomy, trade economics are also nonelective important theoretical courses. Moreover, this department also offers these courses: the history of the Chinese people's economy, Chinese economic geography, Russian, etc.

The special courses of the specialized short term credit courses are: short term credit organization and planning, national bank technique and auditing, money circulation organization and planning.

The special courses of the course specializing in long term credit are: fundamental construction investment appropriation and long term credit organization, long term investment banking technique and auditing, the accounting auditing of fundamental constructions and economic analysis.

To complete the program of this department one must study 4 years.

Domestic Trade Department

Domestic trade is important for linking different parts of the Chinese people's economy; it is the fundamental means of sending products from the place of production to the consumers, and the important economic axis in stimulating people's economic life. Its basic task according to the demands of the general policy of our national transitional period is to serve industrial and agricultural production and the people's growing consumption needs; to struggle to increase strong socialist economic elements in the commodity circulating areas; to adjust supply constantly, stabilize living costs, and firmly struggle against opportunistic industry; to actively promote farm and handicraft cooperation and the socialist reformation of private industries. Domestic trade is very important for promoting national industrialization along socialist lines and for the transition to a socialist society. According to the fundamental economic principles of Stalin socialism, even after the nation

has entered socialist society, domestic trade will still be very necessary.

The task of the domestic trade department is to train first-rate experts in domestic trade for national economic construction so they will be able to undertake construction projects for our national trade economy. Following the high tide of Chinese national large scale economic construction, the development of domestic commodity circulation, and the expansion of state and cooperative trade, the principles supplied by the various courses of this department are very important in determining the direction in which trade in China will develop.

Besides such political theory courses as fundamentals of Marxism-Leninism, political economics and the history of the Chinese revolution, the main courses of this department are: the history of the Chinese people's economy, fundamentals of civil law, Chinese economic geography, Russian, the trade economy of the Soviet Union, trade economics, domestic trade organization and technique, principles of statistics, principles of bookkeeping, auditing and trade bookkeeping auditing, trade organization and economic activity analysis, people's economic planning, commodities, purchase organization and planning agricultural products, finance and credit, etc.

To complete the program of this department one must study 4 years.

Foreign Trade Department

Foreign trade is important in all areas of the people's economy. Our foreign trade is important for promoting the recovery and development of the Chinese people's economy. During the recovery

period the import of great quantities of industrial materials, instruments, equipment, and daily necessities, and the export of great quantities of farm by-products have helped the speedy recovery of Chinese light industry, heavy industry, communication, transportation, and agriculture and have helped to meet the urgent needs of China and her people, stabilized the domestic market, stimulated the exchange of rural and urban areas, and further strengthened the economic union of industry and agriculture. At present, to further realize the general line of the party and China during the transitional period, the expansion of foreign trade is very important. To make China socialist, we should first hasten to establish a powerful up-to-date heavy industry. With imports, mainly those from the Soviet Union, we can obtain the material we urgently need for national construction but cannot yet produce various whole sets of equipment, industrial material, various commodities, and advanced technical knowledge. Thus our industrialization is bound to be accelerated. In export, the export of great quantities of farm by-products and native products will certainly stimulate the planned production of farm by-products and handicrafts, and hasten to make them applicable to mutual cooperation. From the above it is obvious that in further implementing the general line, foreign trade is extraordinarily important and significant. Besides, because China's foreign trade supplies our brother countries with rich materials and goods, it will certainly satisfy their requirements for economic development and for the people's daily necessities; thus it helps vigorously to strengthen the peaceful democratic camp. At the same time the expansion of China's equal and mutual trade relationship with the capitalist countries plays a definite role in maintaining international peace and promoting a normal international economic relationship.

Besides, to successfully develop an efficient system of foreign trade in accordance with the enlightened general plan, we must train very many foreign trade workers. At the same time the need for such training explains the importance and significance of foreign trade.

The science of foreign trade is a special economic science that studies the exchange of Chinese commodities with foreign commodities. The task of the foreign trade department is to train first-class experts in foreign trade; these must have a high level of theoretical understanding and a corresponding level of political knowledge as well as concrete knowledge in this special field.

The courses of the foreign trade department are primarily devoted to such political theory courses as fundamentals of Marxism-Leninism, political economics, the history of the Chinese revolution, etc. Such courses give us the correct classless position, viewpoint and methods. Secondly, this department offers these fundamental and special courses: fundamental courses: techniques of calculation, economic geography, etc. Foreign languages are necessary in a foreign trade department, therefore they occupy a large place in the teaching plan of this department. Three foreign languages are offered: Russian, English, and French. Every student must take one of them. The main special courses include principles of Soviet and Chinese foreign trade, international trade, foreign trade organization and technique, the world market, commodities, international account and foreign trade capital supply. These are all very practical courses needed for foreign trade work.

To complete the program in this department one must study 4 years.

Students who want to enroll in this department must have a thorough understanding of political matters and must be in good health.

Foreign Trade Translation Department

To achieve national industrialization along socialist lines our foreign trade must obtain for us the mechanical equipment and advanced technology required by national industrialization -- equipment and technology such as we cannot yet produce at all or in sufficient quantity. This is the chief task of foreign trade in the transitional period. Meanwhile, with the steady realization of the socialist industrialization by our country, the development of the international trade relationships becomes more necessary. To actively develop trade relationships with all countries, primarily with the new democratic world market under the leadership of the Soviet Union, we must first train a group of translator cadres who will wholly devote themselves to serving the people through their participation in Chinese foreign trade.

The foreign trade translation department was established to satisfy this need in Chinese economic construction. Because of current needs in Chinese foreign trade work this department now offers the following 8 specialized courses: Russian, German, English, Korean, Vietnamese, Japanese, French, and Spanish. Every specialized course requires the students to take 3 years of study to master foreign trade translation work (including oral and written translation) of one of the foreign languages.

The main course of each specialized course is a fundamental foreign language. Common to all the specialized courses are: fundamentals of Marxism-Leninism, political economics, the history of the

Chinese revolution, principles of Soviet and Chinese foreign trade, foreign trade organization and technique, international trade and the Chinese language.

Students who want to enroll in this department must have a good knowledge of political matters and a certain basic knowledge in one of the above foreign languages.

Handicraft Producers' Cooperative Department

The steady realization of Chinese reformation along socialist lines in handicrafts is an important organic part of the general line and the general task of the transitional period in China, and also an organic part of Chinese industrialization along socialist lines. The best and only organizational form for reforming hundreds of thousands of handicraftsmen and for guiding them to active participation in socialist construction is the handicraft cooperative. Handicraft cooperatives are a constant and powerful assistant for state industries. It is not only important politically and economically in the socialist transitional period, but also plays a very important role during the gradual transition from socialism to communism. At present, following the progress of national large scale, planned economic construction, the improvement of the people's living standard, especially the daily growing purchasing power of the farmers, handicraft producers' cooperatives obviously become more important.

The goal of the handicraft producers' cooperative department is to train high level experts in the field of handicraft producers' cooperatives to meet the needs of national economic construction.

To complete the program of this department one must study 4 years.

Besides such courses in political theory as fundamentals in Marxism-Leninism, political economics, the history of the Chinese revolution, the main courses of this department include the following fundamental and special courses: Chinese economic geography, the history of the people's economy, principles of statistics, fundamentals of labor law and administrative law, people's economic planning, finance and credit, the theory and history of cooperatives, industrial economics, handicraft cooperative organizations and planning, industrial statistics, bookkeeping auditing of handicraft cooperatives, economic activity analysis of handicraft cooperatives, the art of the various departments of the handicraft producers' cooperatives.

Supply and Consumers' Cooperatives Department

The supply and consumers' cooperative is one of the results of economic science, the crystallization of more than 30 years of Soviet trade, and the trade activity that studies the organization and industry of the supply and consumers' cooperative based on the necessity of trade during the transitional period and the socialist construction period according to Lenin and Stalin, the trade theory of Stalin, and the highest economic results.

The object of study of this department is the means of carrying out the general policy and the general task of the party during the transitional period by the supply and consumers' cooperatives, the task and role of the Soviet consumers' cooperatives during the transitional period from socialism to communism, the democratic management system of the cooperatives, retail of the cooperatives,

wholesale organization and industrial organizational system, organization of the cooperatives and the internal structure of industry, the structure and arrangement of the shop network and godown network, application of goods, technique and data, labor organization of the workers, etc.

Consequently, study in this department is very important for further improving and developing our national cooperatives, and in exerting the effects of supply and consumers' cooperatives to promote the socialist reformation of the handicraft industry and private industries.

This department trains higher experts in matters dealing with cooperative trade organizations.

To complete the program of this department one must study 4 years.

The main political theoretical courses of this department are: fundamentals of Marxism-Leninism, political economics, the history of the Chinese revolution. The main courses and special courses of this department are: economic history of the Chinese people, Chinese economic geography, Russian, the theory and history of the cooperatives, trade economics, trade statistics, bookkeeping auditing, economic activity analysis, and examination of the cooperatives, etc.

Railroad Accounting Auditing Department

This department trains higher experts in railroad accounting auditing in a 4-year course. The graduates besides acquiring a certain level of political knowledge must also master the theory and technique of railroad accounting auditing.

Railroad accounting auditing is the concrete application of accounting auditing in railroad affairs. It is a special science. It records, compiles, and analyzes all the economic transactions of the railroad with a standard monetary measurement, according to a strict invoice system; it uses the account and double account, the account sheet, the assets and liability sheet and the report sheet. The important function of railroad accounting auditing in national construction is to supervise the plans for the railroad transportation business and to see how they are being executed, to protect socialist assets, to ascertain the financial results of the transportation business, to raise labor output, and to mobilize the internal resources of the railroad to further lower transportation costs and accumulate capital.

This department offers the following political courses: fundamentals of Marxism-Leninism, political economics; the following fundamental courses and special courses: Russian, mathematics, people's economic planning, finance and credit, economics and communication geography, principles of statistics, the general theory of the railroad, management of locomotives and cars, organizing time tables, railroad planning, railroad finance, railroad statistics, principles of accounting auditing, industrial and railroad accounting auditing, railroad economic activity analysis, etc.

Railroad Statistics Department

This department trains higher experts in railroad statistics in a 4-year course. The graduates besides having a definite level in politics, must also be able to master the theory and statistics of railroad accounting.

Railroad accounting is the concrete application of statistics in the management and administration of railroad transportation. It is a special science. It starts from survey and research and uses such analytical methods like the mean value, the relative value and index to supervise and examine the completion of the railroad transportation plan, to discover the inner connection and the rules of the different departments of the railroad transportation business in order to utilize efficiently railroad transportation instruments, raise the labor production rate, lower transportation costs and accumulate capital. It lays special emphasis on the examination and analysis of the daily business planning of the railroad to guarantee systematic progress in the railroad transportation business.

This department offers the following courses: political courses: the history of the Chinese revolution, fundamentals of Marxism-Leninism, political economics; fundamental courses and special courses: Russian, mathematics, people's economic planning, communication geography, accounting auditing principles, general theory of the railroad, management of locomotives and cars, time table organization, railroad planning, railroad finance, principles of statistics, economic statistics, railroad statistics, mechanized calculation organization, etc.

ATHLETICS

"It is specially beneficial to widely develop athletics and exercise among the people for this can discipline the people, strengthen their physical constitution, stimulate incentive and initiative and teach the people to act in harmony. In short, athletics and exercise are important in training healthy, strong, alert, intelligent, and

courageous people who are able to conquer difficulties yet have the confidence to confront the future." Karinien [sic].

(1) Due to the social, political, economic, and cultural backwardness of the old China, the people's physical constitution and health were generally poor. Although the improvement of several factors caused their improvement after the liberation poor health still seriously affects production, work, and study. Especially now with China's entry into the new historical period of socialist society we need more healthy people. But the current health conditions of the people are far from meeting the needs of various kinds of work. Therefore in 1953 chairman Mao proposed the slogan of "good health, good work, good study" to all China's youth. In January 1954 the central committee of the Chinese Communist Party in the "directive for strengthening people's athletics," further accurately pointed out that "to improve the people's health and to strengthen the people's physical constitution is an important political task of the party." To carry out this task, besides strengthening hygiene work and gradually improving labor and study conditions, expanding athletics is really the most active and efficient scientific method. Only when we spread athletics among the broad masses of the people can we make all China's people basically healthy so they may fully utilize their working ability for the socialist construction of China.

Athletics are not only important for improving the health of the people and for fully developing the working capacity of the human body. They can also help train the people in courage, perseverance, alertness, endurance, the law-abiding spirit, optimism and collectivism and similar good qualities. It is one of the main tactics of Communist education, and also a beneficial and healthy

activity for enriching the people's cultural life. All these are required by socialist construction. Therefore athletics is also an essential element for successfully realizing the general policy and China's general task.

The great revolutionary leader Marx taught us that "Production work should be integrated with teaching and athletics. This is not only one of the tactics for increasing social production, it is also the only tactic for producing complete development." Lenin had pointed out that: "The task of ultimately completing communism is set before these youth; the task of struggling for communism is especially theirs; therefore they must have strong and healthy bodies, iron wills and firm spirits to undertake these tasks." On the basis of such theories the central presidium of the executive committee in a resolution dated as early as 1930 pointed out that: "In the Soviet Union, among the various means of training new men -- the builders of and fighters for socialism -- workers' athletics have great significance." In the Soviet Union, due to the constant concern about and direction of athletics by Stalin, athletics long ago became an essential part of the life of the Soviet people. It urges the people ever forward; it urges them to undertake strict scientific training for better participation in labor and for the protection of our holy country. Such a general, constant, and mass athletical training of the Soviet people gloriously revealed its great results in the great patriotic war of the Soviet Union and in world record breaking communist construction.

The constant emphasis and concern of chairman Mao, the direction and support of the Chinese Communist Party and the central people's government, and the assistance of the advanced athletical theories and experience of the Soviet Union have made the athletic

movement in China attain the achievements it has. At present, it is steadily progressing toward the direction of the "mass," according to the road directed by the general policy and according to national and people's needs. To meet the development of this mass athletic movement, the vigorous training of athletic cadres is very important. For instance in the middle schools, if on an average of every 100 students needs one athletics teacher, then the whole country will need more than 30,000 athletics teachers. The need for athletics experts will be even greater if we consider the demands of factories, armies, organizations, elementary schools, and various athletic committees. But at present there is a serious shortage of athletic cadres. The central and various local athletical schools are either newly established or just combined. The students enrolled in such schools and departments are also far from meeting the actual need of the athletic projects. If such a condition is not corrected gradually, the mass athletic movement will be hindered by a shortage of athletic cadres. This will make it impossible for athletics to play the role it should in socialist construction.

Young comrades must fully understand the importance of athletics in national construction as a whole and the glory and great task of undertaking such a task.

(2) To train athletic cadres according to plan, 4 athletic schools have been established for the whole country: the Central, East China, Mid-South, and Southwest Athletical Schools. In 1954 3 more athletic schools will be added: the North China, Northeast, and Northwest Athletic Schools. The athletic schools separately offer the following different systems: department, middle special course, contest coaching, and research.

This year the Central Athletic School established a graduate section for athletic department graduates with definite working experiences. The students will study under the direct guidance of Soviet experts and will be trained as athletic school and athletic department teachers. Such graduate work continues for 2 years. The special course is open to high school graduates. It continues for 2 years and trains the students as athletic cadres. It provides them with a definite foundation in theories of athletics and in athletic technique. The middle special course is open to junior high school graduates, with a 3-year course, to train them to be middle school athletics teachers and athletical cadres for the various basic units. The contest coaching course trains coaches and referees for various kinds of games, promotes the development of the mass athletic movement in all localities, and improves the level of athletic technique with a 2-year course. Requirements for enrollment will be announced separately.

(3) The special courses of the 7 athletic schools this year are open to 1,000 high school graduates. The courses offered by these special courses are divided into 2 types: fundamental and special courses.

Fundamental courses: history of the Chinese revolution, fundamentals of Marxism-Leninism, Russian, psychology, education, human anatomy, physiology, hygiene.

Special courses: theories of athletics, athletics administration, exercises, field racing, ball games, aquatic sports, ski sports, Chinese boxing, dancing.

FINE ARTS

The goal of fine arts education is to train artists for socialist construction. They should be healthy and patriotic and have attained a definite level in Marxist-Leninist thinking, a thorough understanding of their own fields, and a mastery of special techniques. Because China has already entered the transitional period of socialism, art is inseparable from socialist construction; artists must join forces with all the Chinese people actively working for the successful realization of the general policy and general task of steadily carrying out the socialist reformation of China in agriculture, handicrafts, in capital industries, and the steady realization of national industrialization along socialist lines during a long long period.

Consequently the mastery of the Marxist-Leninist world view is the basis for training young artists in all the higher arts institutes in China. The basic policy during this new historical period in all the higher art institutes of China is to train young artists to master their special fields and to acquire general artistic training. This policy aims to make every art student an active builder of socialism.

At present China has 14 higher institutions for dramatics, music, and art. The institute of dramatics has departments in acting, producing, stagecraft, and dramatic literature. The institute of music has departments for the study of composition, voice, piano and string instruments. The institute has departments for painting, sculpture, and sketching. The concrete goals of training, the duration of study, and the main courses of the above departments are given below.

I. Dramatics

The dramatics school specializes in drama. Its fundamental educational policy is to integrate theory with practice, to hand down and develop the excellent tradition of Chinese art, to study the advanced dramatic experience of the Soviet Union, to make art serve the workers, farmers, and soldiers, and to have its students master the fundamental principles of socialist and realistic artistic creation. It trains for China experts with a fundamental knowledge of Marxist-Leninist theories and with a mastery of the art of dramatics. Five years are needed to complete the studies in each department.

(1) Performing Department

Special Course in Drama Acting. The purpose of the special course in drama acting is to train for China experts for dramatic acting. These experts should have a fundamental knowledge of Marxism-Leninism and a special knowledge in acting and acting technique. They should have a mastery of the basic creative methods of socialism and realism and be able to undertake dramatic acting assignments after graduation.

Besides such courses in political theories as fundamentals of Marxism-Leninism, dialectical materialism and historical materialism, political economics, and the history of the Chinese revolution, the fundamental courses of this department are: aesthetics, the selection of world famous dramas, music; the special courses are: acting, theater reading, pantomime for the actor, voice training, etc.

Students who want to enroll in this department must have a specified foundation in literature; they must be imaginative, expressive, healthy, and they must be clear in speech; they must be able to perform realistically and reasonably, and they must be steady in thought and emotions. The deformed and sick (for example, the single-eyed, the slant-eyed, the limping, the color-blind, the 6-fingered, and the rabbit lipped, etc, may find themselves hindered in this special course) do not qualify for this department.

(2) Directing Department

Special Course in Directing Dramatics (Not Open For Enrollment This Year). The goal of the directing department is to train for China experts in drama directing. It attempts to provide its students with fundamental knowledge in Marxism-Leninism and special knowledge in directing; it attempts to have them master the methods and techniques needed for directing and performing in artistic creations. After graduation the students of this department will direct dramas.

Besides such political theory courses like fundamentals in Marxism-Leninism, dialectical materialism and historical materialism, political economics, the history of the Chinese revolution, this department offers the following fundamental courses: aesthetics, selective reading of literary masterpieces, selective reading of world dramatic masterpieces, history of the drama, fine arts, make-up, etc; the following special courses: directing, performing, theater reading, pantomime for the actor, voice training, etc.

Students who want to enroll in this special course must have definite literary background, some experience in directing and acting

and a comparatively rich knowledge of society. The sick and the deformed do not qualify for this special course.

(3) Stagecraft Department

Special Course in Stagecraft. The goal of the special stagecraft course is to train for China experts in stagecraft design who will have a fundamental knowledge of Marxism-Leninism and who will have mastered the special knowledge of stagecraft and the technique of stagecraft design. After graduation, they can do stage design work in the theater.

Besides such political theory courses as fundamentals in Marxism-Leninism, dialectical materialism and historical materialism, political economics, the history of the Chinese revolution, this special course offers the following fundamental courses: aesthetics, selective readings of literary masterpieces, the history of drama, the selection of world dramatic masterpieces; the following special courses: drawing, color-painting, artistic creation, stage design, stage technique, stage lighting technique, make-up, etc.

Students who want to enroll in this department must have a certain foundation in drawing and painting. The color-blind do not qualify for this special course.

(4) Dramatic Literature Department

Special Course in Dramatic Literature (Not Open For Enrollment This Year). The goal of the dramatic literature department is to train for China experts for drama writing who have fundamental knowledge in Marxist-Leninist theories, ability in understanding and analyzing literature and in mastering the fundamental methods

and technique of dramatic creative writing. After graduation they can pursue dramatic creative writing.

Besides such political theory courses as fundamentals of Marxism-Leninism, dialectical materialism and historical materialism, political economics, the history of the Chinese revolution, this special course offers the following fundamental courses: aesthetics, selection of literary masterpieces, history of the drama; the following special courses: writing and drama writing.

Students who want to enroll in this department must have a good foundation in literature and certain ability and experience in writing.

II. Music

(1) Composition Department

The goal of training:

School: composers, or composition teachers for music schools.

Special course: composers of vocal music and small operas, or music teachers for the general middle schools and popular art schools.

This department offers the following courses in political theories: the history of the Chinese revolution, fundamentals of Marxism-Leninism, political economics; the following literary course: literary thought, literature, Russian, athletics; the following main courses: history of music, principles of music, sight-singing and ear-training, chorus, the symphony, native music, theory of composition, harmony, counterpoint, score reading, orchestration, the canon,

composition of opera, research in instrument creation or opera creation, conducting, piano, Chinese instruments, etc.

Students who want to enroll in this department must have a fundamental knowledge of music (e.g., principles of music, basic harmony, etc), good hearing and definite composing ability, as well as good health.

(2) Vocal Department

The goal of training:

School: soloist, opera singer or vocal teachers for music schools.

Special course: chorus singers, singers of singing and dancing troops and of the opera house, or music teachers for middle schools and popular art schools.

The political and cultural courses of this department are the same as that of the composition department. The main courses are: history of music, principles of music, sight-singing and ear-training, chorus, general knowledge of composition, native music, vocal training, theories of voice, folk songs, ballad music, local opera, Chinese instruments, etc.

Students who want to enroll in this department must have definite foundation in music, a good voice, good hearing, a healthy vocal organ, and good health.

(3) Piano Department (This is the Special Piano Course of the Instrumental Department)

The goal of training:

School: piano soloist, accompanists, or piano teachers for music schools.

Special course: piano accompanists, or music teachers for general middle schools and popular music schools.

The political theory courses and cultural courses of this department are the same as in the above departments. The main courses are: history of music, principles of music, sight-singing and ear-training, chorus, the symphony, general knowledge of composition, native music, chamber symphony, piano, second musical instrument (including the accordion and Chinese musical instruments).

Students who want to enroll in this department must have a definite fundamental knowledge of music; they must have good hearing, have an elementary knowledge of piano playing, and have good health.

(4) String Instrument Department (This is the Special Course in String Instruments of the Instrument Department)

The goal of training:

School: string instrument soloist, orchestra members, teachers of string instruments for the music schools.

Special course: orchestra members, string instrument soloist, or music teachers for the general middle schools and popular art schools.

The political theory courses and the cultural courses of this department are the same as in the above departments. The main courses are: history of music, principles of music, sight-singing and ear-training, chorus, symphony, general knowledge of composition, native music, chamber symphony, major instrument, second instrument (if the major is a western instrument, then the minor must be a Chinese instrument).

Students who want to enroll in this department must have a specified fundamental knowledge of music, good hearing, a basic ability to play some instrument, and good health.

III. Arts

All higher art institutions in China can be divided into 2 types:

Schools: offer 2 departments: painting (oil painting, color-painting and easel painting) and sculpture; both offer a 5-year course.

Special course: With very few exceptions all the fine arts departments of the arts school or the special fine arts department have the following 3 courses (special courses, or groups): painting, sketching and sculpture; all in a 3-year course.

Students who want to enroll in this department must not be color-blind or have other physical deformities that would hinder the study of arts.

(1) Painting Department (Special course)

The goal of training:

School: to train creative artists in oil-painting, color-painting and easel painting, and teachers for art institutes.

Special course: to train creative painting cadres who can use oil-painting, color-painting or wood engraving to create new year drawings, serial drawings and political propaganda drawings; and arts teachers for the general middle schools or popular arts schools.

The main courses of this department are: drawing, painting, anatomy, the transparency, color, literary thought, history of art, etc.

(2) Sculpture Department (Special course)

The goal of training:

Schools: to train sculpture experts and teachers for arts institutes. They must be familiar with the special technique of round (?) sculpture and surface (?) sculpture, and be able to do independent creative works.

Special course: to train creative sculpture cadres and art teachers for the general middle schools and popular arts schools. The students must be able to sculpture heads, busts, and simple figures.

The main courses of this department are: drawing, painting, sculpture, study of famous sculptures, creative sculpture, etc.

(3) Sketching Department (Special course)

The Central Arts School and its East China Branch do not have this department for the time being.

The goal of training:

Special course: to train sketching cadres in designing textiles or publications on artistic decoration and to train arts teachers for the general middle schools and popular art schools.

The main courses of this department are: drawing, painting, painting on utensils, fundamental sketching, copying designs, and creative drawing in various fields.

GUIDE TO THE 1954 SUMMER SESSION OF THE HIGHER INSTITUTES OF LEARNING

TECHNOLOGY

I. Geology and Surveying

(1) Mineral geology and surveying, metal and nonmetal mineral geology and surveying; 4-year course, Peking Institute of Geology, Mid-South Institute of Mineralogy; 2-year course, geology department of Nanking University, Chungking University.

(2) Mineral geology and surveying, coal mine geology and surveying; 4-year course, Peking Institute of Geology, Peking Institute of Mineralogy.

(3) Mineral geology and surveying, geology and mineral surveying; 4-year course, Peking Institute of Geology, Northeast Institute of Geology; 2-year course, Northeast Institute of Geology.

(4) Geophysical mineralogy; 4-year course, Peking Institute of Geology, Northeast Institute of Geology.

(5) Hydrogeology and engineering geology; 4-year course, Peking Institute of Geology, Northeast Institute of Geology; 2-year course, Northeast Institute of Geology.

(6) Geology and surveying for petroleum and natural gas; 4-year course, Peking Institute of Geology, Peking Institute of Petroleum; 2-year course, geology department of Southwest University.

(7) Geology; 4-year course, geology department of Nanking University.

(8) Mine surveying technique; 2-year course, Mid-South Institute of Metallurgy.

II. Mining and its Management

(1) Mining; 4-year course, Peking Institute of Steel Technology, Peking Institute of Mineralogy, Northeast Institute of Technology, Mid-South Institute of Metallurgy, Kunming Institute of Technology.

(2) Dressing of useful minerals; 4-year course, Peking Institute of Mineralogy, Northeast Institute of Technology, Mid-South Institute of Metallurgy; 2-year course, Mid-South Institute of Metallurgy.

(3) Mine surveying; 4-year course, Peking Institute of Mineralogy.

(4) Mine electrical engineering; 4-year course, Peking Institute of Mineralogy, Northeast Institute of Technology; 2-year course, Hunan Coal Mine Institute.

(5) Mine construction; 4-year course, Peking Institute of Mineralogy, Northeast Institute of Technology; 2-year course, Hunan Coal Mine Institute.

(6) Mining of petroleum and natural gas; 4-year course, Peking Institute of Petroleum, Northeast Institute of Technology.

(7) Drilling for petroleum and natural gas; 4-year course, Peking Institute of Petroleum.

(8) Storing and conveying petroleum and natural gas; 4-year course, Peking Institute of Petroleum.

(9) Economics and the organization of the mine; 4-year course, Peking Institute of Mineralogy.

III. Dynamics

(1) Generating station, distribution network and integrated power transmission system; 5-year course, Ching-Hwa University, Harbin University of Technology; 4-year course, Tientsin University, Taiyuan Institute of Technology, Northwest Institute of Technology, Chiao-Tung University, Che-Kiang University, Nanking Institute of Technology, Shantung Institute of Technology, Mid-China Institute of Technology, School of Technology of Szechwan University; 2-year course, Chekiang University, Shantung Institute of Technology, Mid-China Institute of Technology, Chungking University.

(2) Thermodynamics installation; 5-year course, Chinghwa University; 4-year course, Nanking Institute of Technology, Mid-China Institute of Technology, Chungking University.

(3) Hydraulic installations; 5-year course, Chinghwa University; 4-year course, Mid-China Institute of Technology.

(4) Ship thermodynamic installations; 4-year course, Dairen Maritime Institute.

(5) Industrial electrification; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Tientsin University, Northeast Institute of Technology, Chiaotung University, Chekiang University; 2-year course, Tientsin University, Chiaotung University, Nanking Institute of Technology.

IV. Metallurgy

(1) Steel metallurgy; 4-year course, Peking Institute of Steel Technology, Northeast Institute of Technology, Chungking University.

(2) Nonferrous metallurgy; 4-year course, Northeast Institute of Technology, Mid-South Institute of Metallurgy, School of Technology of Yuannan University.

(3) Casting; 4-year course, Peking Institute of Steel Technology.

(4) Metallography and heat treatment; 4-year course, Peking Institute of Steel Technology.

(5) Steel processing; 4-year course, Peking Institute of Steel Technology, Northeast Institute of Technology.

(6) Ferrous metal processing; 4-year course, Northeast Institute of Technology.

(7) The metallurgical furnace and automation; 4-year course, Peking Institute of Steel Technology.

(8) Metallography and the heat treatment of alloys; 4-year course, Mid-South Institute of Metallurgy.

V. Machinery Manufacture and Tool Manufacture

(1) Machinery manufacture engineering; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Tientsin University, Taiyuan Institute of Technology, Dairen Institute of Technology, Northwest Institute of Technology, Chiaotung University, Chekiang University, Nanking Institute of Technology,

Shantung Institute of Technology, Mid-China Institute of Technology, South-China Institute of Technology, Chungking University, School of Technology of Szechwan University, School of Technology of Yuan-nan University.

(2) The metal cutting machine bed and its tools; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Dairen Institute of Technology, Chiaotung University, Chekiang University, Mid-China Institute of Technology, Chungking University.

(3) Foundry engineering and its machinery; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Chiaotung University, Chekiang University, Nanking Institute of Technology, Mid-China Institute of Technology.

(4) Metal processing and its machinery; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Chiaotung University.

(5) Metallography and heat treatment and its workshop equipment; 5-year course, Harbin University of Technology; 4-year course, Chiaotung University.

(6) Welding production and its equipment; 5-year course, Chinghwa University, Harbin University of Technology.

(7) The crane and its equipment; 4-year course, Chiaotung University.

(8) Mine machinery manufacture; 4-year course, Peking Institute of Mineralogy, Northeast Institute of Technology; 2-year course, Huinan Institute of Coal Mine.

(9) Petroleum mine machinery and its equipment; 4-year course, Peking Institute of Petroleum.

(10) Petroleum refining factory machinery and its equipment; 4-year course, Peking Institute of Petroleum Technology.

(11) Metallurgical factory machinery equipment; 4-year course, Peking Institute of Steel Technology.

(12) Chemical production machinery and its equipment; 4-year course, Tientsin University, Dairen Institute of Technology, Chekiang University, East-China Institute of Chemical Engineering.

(13) Light industry machinery and its equipment (textile machinery); 4-year course, East-China Institute of Textiles.

(14) Vehicle manufacture; 4-year course, Chiaotung University.

(15) Automobile; 5-year course, Chinghwa University; 4-year course, Chiaotung University, Shantung Institute of Technology, Mid-China Institute of Technology.

(16) Tractor; 5-year course, Chinghwa University.

(17) Ship manufacture; 4-year course, Dairen Institute of Technology, Chiaotung University.

(18) Ship machines and machinery; 4-year course, Dairen Institute of Technology, Wuhan Maritime School.

(19) Boiler manufacture; 4-year course, Chiaotung University.

(20) Turbine engine manufacture; 4-year course, Chiaotung University.

(21) Internal combustion engine; 4-year course, Tientsin University, Chiaotung University, Mid-China Institute of Technology.

(22) Steam locomotive manufacture; 4-year course, Chiaotung University.

(23) Ship steam motor and its equipment; 4-year course, Chiaotung University.

(24) Optical instruments; 4-year course, Chekiang University.

(25) Precision instruments; 4-year course, Tientsin University.

(26) Metal cutting processing; 2-year course, Tientsin University, Taiyuan Institute of Technology, Northwest Institute of Technology, Chiaotung University, Chekiang University, Nanking Institute of Technology, Shantung Institute of Technology, Southern Kiangsu Institute of Technology, Mid-China Institute of Technology, Chingking University.

(27) Metal engineering tools; 2-year course, Chiaotung University, Chekiang University.

(28) Tool machine; 2-year course, South-China Institute of Technology.

(29) Foundry; 2-year course, Chiaotung University, Chekiang University, Sunan Institute of Technology, Mid-China Institute of Technology.

(30) Heat treatment; 2-year course, Chiaotung University, Shantung Institute of Technology.

VI. Electrical Machinery Manufacture and Electrical Tool Manufacture

(1) Electric machinery and tools; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Chiaotung University, Chekiang University, Mid-China Institute of Technology; 2-year course, Chaiotung University.

(2) Electric insulation and electric cable technique; 4-year course, Chiaotung University.

(3) Electric vacuum technique; 5-year course, Chinghwa University; 4-year course, Nanking Institute of Technology.

(4) Radio engineering; 5-year course, Chinghwa University; 4-year course, Nanking Institute of Technology.

VII. Chemical Techniques

(1) Petroleum and natural gas engineering; 4-year course, Northwest Institute of Technology, Peking Institute of Petroleum.

(2) Fuel chemical engineering; 4-year course, Tientsin University, Dairen Institute of Technology, Chekian University, East-China Institute of Chemical Engineering, Peking Institute of Petroleum.

(3) Inorganic engineering; 4-year course, Tientsin University, Taiyuan Institute of Technology, Dairen Institute of Technology, East-China Institute of Chemical Engineering, Szechwan Institute of Chemical Engineering.

(4) Silicate industry; 4-year course, Tientsin University, East-China Institute of Chemical Engineering, South-China Institute of Technology; 2-year course, Tientsin University, Nanking Institute of Technology.

(5) Organic compound engineering; 4-year course, Tientsin University, Dairen Institute of Technology, East-China Institute of Chemical Engineering.

(6) Main organic compound engineering; 4-year course, Dairen Institute of Technology.

(7) Cement production engineering; 4-year course, Nanking Institute of Technology.

(8) High molecular compound engineering; 4-year course, Szechwan Institute of Chemical Engineering.

(9) Techniques in rubber and natural rubber; 4-year course, South-China Institute of Technology; 2-year course, South-China Institute of Technology.

(10) Industrial analysis; 2-year course, Chekiang University.

VIII. Food and Seasoning Techniques

(1) Yeast manufacture engineering; 4-year course, Nanking Institute of Technology.

(2) Sugar product engineering; 4-year course, South-China Institute of Technology, Szechwan Institute of Chemical Engineering.

(3) Food management, rice, flour and reasonable food production art; 4-year course, Nanking Institute of Technology.

IX. Light Industry

(1) Leather, fur and leather-dressing techniques engineering; 4-year course, Szechwan Institute of Chemical Engineering.

(2) Fiber material mechanical engineering; 4-year course, Tientsin University, Northwest Institute of Technology, Chingtao Institute of Technology, East-China Institute of Textile Technology.

(3) Fiber material chemical engineering; 4-year course, East-China Institute of Textile Technology.

(4) Fiber examination; 2-year course, East-China Institute of Technology.

XI. Surveying, Drawing, Meteorology, Hydrology

(1) Engineering surveying; 5-year course, Chinghwa University; 4-year course, Tungch'i University; 2-year course, Tung Ch'i University, Tientsin University, Nanking Institute of Technology, Chingtao Institute of Technology, South-China Institute of Technology.

(2) Aerial photographical surveying; 4-year course, Tung Ch'i University.

(3) Ground hydrology; 4-year course, East-China Hydraulic School.

XII. Construction and Municipal Engineering

(1) Construction; 5-year course, Chinghwa University; 4-year course, Tientsin University, Northeast Institute of Technology, Tungch'i University, South-China Institute of Technology, Chungking Institute of Civil Engineering.

(2) Industrial and civilian construction; 5-year course, Chinghwa University, Harbin University of Technology, Northwest Institute of Technology, Chekiang University, Nanking Institute of

Technology, Chingtao Institute of Technology, Tungch'i University, South-China Institute of Technology, Mid-China Institute of Civil Engineering, Chungking Institute of Civil Engineering; 2-year course, Tientsin University, Taiyuan Institute of Technology, Northwest Institute of Technology, Chekiang University, Nanking Institute of Technology, Chingtao Institute of Technology, Tungch'i University, Southern Kiangsu Institute of Civil Engineering, Chungking Institute of Civil Engineering.

(3) The building of industrial and civil structures; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Tientsin University, Northeast Institute of Technology, Northwest Institute of Technology, Nanking Institute of Technology, Tungch'i University, South-China Institute of Technology, Chungking Institute of Civil Engineering.

(4) City construction and management; 4-year course, Tungch'i University.

(5) Heating, gas supply, and ventilation; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Northeast Institute of Technology, Tungch'i University.

(6) Water supply and sewerage; 5-year course, Chinghwa University, Harbin University of Technology; 4-year course, Tungch'i University; 2-year course, Tungch'i University.

(7) Railroad construction; 4-year course, Tangshan Railroad Institute, Tungch'i University, Mid-China Institute of Civil Engineering; 2-year course, Tangshan Railroad Institute, Tungch'i University, Mid-China School of Civil Engineering.

(8) The highway and city road; 5-year course, Chinghwa University; 4-year course, Nanking Institute of Technology, Tungch'i University, Mid-China Institute of Civil Engineering, Engineering School of Szechwan University.

(9) Bridge and tunnel; 4-year course, Tangshan Railroad Institute, Tungch'i University, Mid-China Institute of Civil Engineering, Engineering School of Szechwan University.

(10) River structure and hydraulic station construction; 5-year course, Chinghwa University; 4-year course, Tientsin University, Dairen Institute of Technology, Northwest Institute of Technology, Chingtao Institute of Technology, East-China Hydraulic Institute, Hydraulic School of Wuhan University, School of Engineering of Szechwan University.

(11) Hydraulic technical construction; 2-year course, Northwest Institute of Technology, Chingtao Institute of Technology, East-China Hydraulic Institute, Hydraulic School of Wuhan University, School of Engineering of Szechwan University.

(12) Hydraulic construction of waterway and harbor; 4-year course, Tientsin University, Dairen Institute of Technology, East-China Hydraulic Institute, Hydraulic School of Wuhan University.

(13) Hydraulic soil improvement; 4-year course, Tientsin University, Northwest Institute of Agriculture, East-China Hydraulic Institute, Hydraulic School of Wuhan University; 2-year course, East-China Hydraulic Institute.

(14) Highway; 2-year course, Nanking Institute of Technology.

(15) Railroad design; 2-year course, Mid-China Institute of Civil Engineering.

(16) Railroad and track management; 2-year course, Tangshan Railroad Institute.

XIII. Transportation

(1) Railroad management; 4-year course, Peking Railroad Institute.

(2) Railroad transportation machinery; 4-year course, Peking Railroad Institute.

(3) Railroad transportation business; 4-year course, Peking Railroad Institute.

(4) Automation, long distance control, railroad transportation and communication; 4-year course, Peking Railroad Institute.

(5) Railroad transportation dynamics; 4-year course, Tangshan Railroad Institute.

(6) Electric transportation; 4-year course, Tangshan Railroad Institute.

(7) Ship operation; 4-year course, Dairen Maritime Institute.

(8) Ship repairing; 4-year course, Dairen Maritime Institute.

(9) Maritime management; 4-year course, Dairen Maritime Institute, Wuhan Maritime Institute.

(10) Automobile maintenance and repair; 2-year course, Mid-China Institute of Technology.

(11) Railroad material technical supply; 2-year course, Peking Railroad Institute.

XIV. Telecommunication

(1) Wireless communication and broadcast; 4-year course, Tientsin University, Nanking Institute of Technology, South-China Institute of Technology.

(2) Telephone and telegram communication; 4-year course, Tientsin University, Chiaotung University, South-China Institute of Technology, Chungking University.

XV. Special Industry; 5-year course, Peking Aeronautic Institute, Peking Industrial Institute; 4-year course, East-China Aeronautic Institute; 2 1/2-year course, Nanking Aeronautic Industrial Institute.

TEACHERS' COLLEGE

(Note: The number 4 in the catalogue means 4-year course; the number 2 means 2-year course.)

I. Education Department

Peking Normal University (4), Northeast Normal University (4), East-China Normal University (4), Mid-China Normal College (4), Southwest Normal College (4), Northwest Normal College (4), Nanking Normal College (4), Hopei Normal College (4) (In the above 8 universities and colleges, education department of the Peking Normal University is divided into 2 departments: school education and preschool education. The Nanking Normal College has only preschool education. departments. The other 6 universities and colleges all specialize in school education.)

II. Political Education Department

Peking Normal University (4), Northeast Normal University (4, 2), East-China Normal University (4), Mid-China Normal College (4, 2), Southwest Normal College (2), Sian Normal College (2), Hopei Normal College (2), Shensi Normal School (2), Shantung Normal College (2), Chekiang Normal College (2), Kiangsu Normal College (2), South-China Normal College (2), Yenpien University Teachers' College.

III. Chinese Language and Literature Department

Peking Normal University (4), Tientsin Normal College (4, 2), Hopei Normal College (4, 2), Shansi Normal College (4, 2), Inner Mongolia Normal College Chinese department (2), Harbin Normal School (2), Southwest Normal College (4, 2), Sian Normal College (4), Shensi Normal School (2), East-China Normal University (4), Shantung Normal College (4, 2), Chekiang Normal College (4, 2), Fukien Normal College (4, 2), Kiangsu Normal College (4), Anhwei Normal College (4, 2), Nanking Normal College (4), Northern Kiangsu Normal School (2), Shanghai Normal School (2), Mid-China Normal College (4, 2), South-China Normal College (4, 2), Honan First Teachers' College (4, 2), Honan Second Teachers' College (4, 2), Hunan Normal College (4, 2), Kiangsi Normal College (2), Kwangsi Normal College (4, 2), Hupei Normal School (2), Honan Normal School (2), Southwest Normal College (4, 2), Szechwan Normal College (4, 2), Kueiyang Normal College (4, 2), Kunming Normal College (4, 2), Chungking Normal School (2), Szechwan Normal School (2)

IV. Russian Department

Peking Normal University (4), Tientsin Normal College (4, 2), Hopei Normal College (2), Shansi Normal College (2), Northeast Normal

University (4), Mukden Normal College (2), Harbin Normal School (2), East-China Normal University (4), Chekiang Normal College (4), Fukien Normal College (4, 2), Kiangsu Normal College (2), Shanghai Normal School (2), Mid-China Normal College (4, 2), South-China Normal College (4, 2), Hupei Normal School (2), Honan Normal School (2), Southwest Normal College (4), Kueiyang Normal College (4)

V. History Department

Peking Normal University (4), Tientsin Normal College (4, 2), Hopei Normal College (4, 2), Shansi Normal College (4, 2), Northeast Normal University (4), Mukden Normal College (4, 2), Sinkiang Minority College Teachers' School (2), East-China Normal University (4), Shantung Normal College (4, 2), Chekiang Normal College (4, 2), Fukien Normal College (4, 2), Kiangsu Normal College (4, 2), Anhwei Normal College (4, 2), Northern Kiangsu Normal College (2), Shanghai Normal School (2), Mid-China Normal College (4, 2), South-China Normal College (4), Honan First Teachers' College (4, 2), Honan Second Teachers' College (4, 2), Hunan Normal College (4, 2), Kiangsi Normal College (4, 2), Kwangsi Normal College (2), Hupei Normal School (2), Honan Normal School (2), Southwest Normal College (4, 2), Szechwan Normal College (4, 2), Kueiyang Normal College (4), Kunming Normal College (2)

VI. Mathematics Department

Peking Normal University (4), Tientsin Normal College (4), Hopei Normal College (4), Shansi Normal College (4, 2), Hopei Normal School (2), Northeast Normal University (4, 2), Harbin Normal School (2), Dairen Normal School (2), Northwest Normal College (4, 2), Sian Normal College (4), Shensi Normal School (2), East-China Normal University (4, 2), Shantung Normal College (4, 2), Chekiang Normal

College (4, 2), Fukien Normal College (4, 2), Kiangsu Normal College (4), Anhwei Normal College (4, 2), Nanking Normal College (4), Northern Kiangsu Normal School (2), Shanghai Normal School (2), Mid-China Normal College (4, 2), South-China Normal College (4, 2), Honan First Teachers' College (4, 2), Honan Second Teachers' College (4, 2), Hunan Normal College (4, 2), Kiangsi Normal College (2), Kwangsi Normal College (4, 2), Hupei Normal School (2), Honan Normal School (2), Southwest Normal College (4), Szechwan Normal College (4, 2), Kueiyang Normal College (4, 2), Kunming Normal College (4, 2), Chungking Normal School (2), Szechwan Normal School (2)

VII. Physics Department

Peking Normal University (4), Tientsin Normal College (4, 2), Hopei Normal College (4), Hopei Normal School (4, 2), Inner Mongolian Normal College Chinese department (2), Northeast Normal University (4, 2), Dairen Normal School (2), Northwest Normal College (4, 2), Sian Normal College (4), Shensi Normal School (4, 2), Sinkiang Minority College Teachers' School (2), East-China Normal University (4), Shantung Normal College (4), Chekiang Normal School (2), Fukien Normal College (4, 2), Kiang Su Normal College (4, 2), Anhwei Normal College (4, 2), Nanking Normal College (4), Shanghai Normal School (2), Mid-China Normal College (4, 2), South-China Normal College (4, 2), Honan First Teachers' College (4, 2), Honan Second Teachers' College (4, 2), Hunan Normal College (4, 2), Kiangsi Normal College (2), Kwangsi Normal College (2), Hupei Normal School (2), Southwest Normal College (4), Szechwan Normal College (2), Kueiyang Normal College (4), Kunming Normal College (4), Chungking Normal School (2), Szechwan Normal School (2)

VIII. Chemistry Department

Peking Normal University (4), Tientsin Normal College (4, 2), Hopei Normal College (4), Shansi Normal College (4, 2), Hopei Normal School (2), Northeast Normal University (4, 2), Harbin Normal School (2), Northwest Normal College (4), Sian Normal College (2), Sinkiang Minority College Teachers' College (2), East-China Normal University (4), Shantung Normal College (4, 2), Chekiang Normal College (4, 2), Fukien Normal College (4), Kiangsu Normal College (4), Anhwei Normal College (4, 2), Nanking Normal College (4), Northern Kiangsu Normal School (2), Mid-China Normal College (4, 2), South-China Normal College (4, 2), Honan First Teachers' College (4, 2), Honan Second Teachers' College (4, 2), Hunan Normal College (4, 2), Kiangsi Normal College (4, 2), Kwangsi Normal College (4), Hupei Normal School (2), Honan Normal School (2), Southwest Normal College (4), Szechwan Normal College (4, 2), Kueiyang Normal College (4), Kunming Normal College (4, 2), Chungking Normal School (2)

IX. Biology Department

Peking Normal University (4), Tientsin Normal College (4, 2), Shansi Normal College (4, 2), Hopei Normal School (2), Northeast Normal University (4), Harbin Normal School (2), Northwest Normal College (4), East-China Normal University (4), Shantung Normal College (4), Chekiang Normal College (4), Fukien Normal College (4, 2), Kiangsu Normal College (4), Anhwei Normal College (2), Nanking Normal College (4), Shanghai Normal School (2), Mid-China Normal College (4), South-China Normal College (4, 2), Hunan Normal College (4, 2), Kiangsi Normal College (4, 2), Hupei Normal School (2), Honan Normal School (2), Southwest Normal College (4), Kunming Normal College (2)

X. Geography Department

Peking Normal University (4), Tientsin Normal College (2), Hopei Normal College (4, 2), Northeast Normal University (4), Dairen Normal School (2), Northsouth Normal College (4, 2), Sian Normal College (2), Sinkiang Minority College Teachers' School (2), East-China Normal University (4), Shantung Normal College (2), Chekiang Normal College (4), Fukien Normal College (4, 2), Anhwei Normal College (2), Nanking Normal College (4, 2), Shanghai Normal School (2), South-China Normal College (4, 2), Honan First Teachers' College (4, 2), Honan Second Teachers' College (4, 2), Hupei Normal School (2), Southwest Normal College (4), Kueiyang Normal College (4, 2)

XI. Athletics Department

Hopei Normal College (4, 2), Shansi Normal College (2), Inner Mongolian Normal College Chinese School (2), Northeast Normal University (4, 2), Sinkiang Minority College Teachers' School (2), Shantung Normal College (2), Chekiang Normal College (2), Fukien Normal College (4, 2), Kiangsu Normal College (2), Shanghai Normal School (2), South-China Normal College (4, 2), Hupei Normal School (2), Southwest Normal College (4, 2), Kueiyang Normal College (2)

XII. Music Department

Peking Normal University (4), Hopei Normal College (4), Northeast Normal University (4, 2), Northwest Normal College (2), East-China Normal University (4), Fukien Normal College (2), Nanking Normal College (4), Mid-China Normal College (2), Southwest Normal College (4)

XIII. Fine Arts

Hopei Normal College (4), Mukden Normal College (2), Northwest Normal College (2), Nanking Normal College (4), Mid-China Normal College (2)

XIV. Drawing Department

Peking Normal University (4), Fukien Normal College (4), Kiangsu Normal College (4), Southwest Normal College (4)

XV. Art Department

Inner Mongolian Normal College Chinese School (2), Shantung Normal College (2), Anhwei Normal College (2), Shanghai Normal School (2), Kiangsi Normal College (2), Kueiyang Normal College (2)

XVI. Literature and History Department

Inner Mongolian Normal College Mongolian department (2)

XVII. History-Geography Department

Yenpien University Teachers' College (4)

XVIII. Mathematics-Physics Department

Inner Mongolian Normal College Mongolian department (2), Yenpien University Teachers' College (4, 2)

XIX. Biochemistry Department

Inner Mongolian Normal College Mongolian department (2), Chinese department (2)

XX. Korean Language Department

Yenpien University Teachers' College (4, 2)

XXI. Minority Languages

Sinkiang Minority College Teachers' School (2)

HEALTH

Clinics Department (5-year course): Peking Medical School, Shansi Medical School, Hopei Medical School, Tientsin Medical School, Shanghai First Medical School, Shanghai Second Medical School, Kiangsu Medical School, Northern Kiangsu Medical School, Chekiang Medical School, Shantung Medical School, Shantung University Medical School, Fukien Medical School, Anhwei Medical School, Chungnan Tung-ch'i Medical School, Hunan Medical School, Hupei Medical School, Kwangsi Medical School, South-China Medical School, Kwanghwa Medical School, Kiangsi Medical School, Honan Medical School, Szechwan Medical School, Kueiyang Medical School, Yuannan University Medical School, Southwest Medical School, Lanchou University Medical School, Medical University of China, Harbin Medical University, Dairen Medical School, Yenpien University Medical School.

Public Health Department (4-year course): Peking Medical School, Shansi Medical School, Shanghai First Medical School, Kiangsu Medical School, Chekiang Medical School, Shantung Medical School, Chungnan Tungch'i Medical School, Medical University of China.

Oral Surgery Department (4-year course): Peking Medical School, Shanghai Second Medical School, Szechwan Medical School.

Pharmacology Department (4-year course): Peking Medical School, East-China Medical School, Szechwan Medical School, Northeast Medical School.

AGRICULTURE-FORESTRY

I. Agriculture

(1) Agriculture; 4-year course, Peking Agriculture University, Hopei Agriculture College, Shansi Agriculture College, Mukden

Agriculture College, Northeast Agriculture College, Northwest Agriculture College, Nanking Agriculture College, Chekiang Agriculture College, Shantung Agriculture College, Fukien Agriculture College, Anhwei Agriculture College, Northern Kiangsu Agriculture College, Mid-China Agriculture College, South-China Agriculture College, Honan Agriculture College, Hunan Agriculture College, Kiangsi Agriculture College, Kwangsi Agriculture College, Southwest Agriculture College, Szechwan University Agriculture College, Yuannan University Agriculture College, Kueichou Agriculture College.

(2) Fruits and vegetables; 4-year course, Peking Agriculture University, Hopei Agriculture College, Mukden Agriculture College, Northwest Agriculture College, Chekiang Agriculture College, Shantung Agriculture College, Fukien Agriculture College, Mid-China Agriculture College, South-China Agriculture College, Southwest Agriculture College.

(3) Plant protection; 4-year course, Peking Agriculture University, Mukden Agriculture College, Northsouth Agriculture College, Nanking Agriculture College, Chekiang Agriculture College, Shantung Agriculture College, Mid-China Agriculture College, South-China Agriculture College, Southwest Agriculture College.

(4) Soil; 4-year course, Peking Agriculture University, Mukden Agriculture College, Northwest Agriculture College, Nanking Agriculture College, Mid-China Agriculture College, South-China Agriculture College, Southwest Agriculture College.

(5) Farm pharmacology; 4-year course, Peking Agriculture University.

(6) Gardening; 4-year course, Peking Agriculture University.

(7) Silkworm and mulberry; 4-year course, Chekiang Agriculture College, South-China Agriculture College, Southwest Agriculture College.

(8) Tea leaves; 2-year course, Chekiang Agriculture College, Anhwei Agriculture College.

(9) Farm hydraulics; 4-year course, Hopei Agriculture College, Northwest Agriculture College.

(10) Farm production machinery; 4-year course, Peking Farm Mechanization College, Northeast Agriculture College, Nanking Agriculture College.

II. Animal Husbandry and Veterinary Science

(1) Animal husbandry; 4-year course, Peking Agriculture University, Shansi Agriculture College, Inner Mongolian Animal Husbandry and Veterinary College, Northeast Agriculture College, Northwest Animal Husbandry and Veterinary College, Nanking Agriculture College, Shantung Agriculture College, Northern Kiangsu Agriculture College, Mid-China Agriculture College, South-China Agriculture College, Szechwan University Agriculture College; 2-year course, Northwest Animal Husbandry and Veterinary College.

(2) Veterinary science; 4-year course, Peking Agriculture University, Inner Mongolian Animal Husbandry and Veterinary College, Northeast Agriculture College, Northwest Animal Husbandry and Veterinary College, Nanking Agriculture College, Shantung Agriculture College, Northern Kiangsu Agriculture College, Mid-China Agriculture College, South-China Agriculture College, Kiangsi Agriculture College, Szechwan University Agriculture College; 2-year course, Northwest Animal Husbandry and Veterinary College.

III. Agronomy

(1) Agronomy; 4-year course, Peking Agriculture University, Mukden Agriculture College, Northwest Agriculture College, Nanking Agriculture College, Mid-China Agriculture College, Southwest Agriculture College.

(2) Socialist agriculture business management and administration; 4-year course, Peking Farm Mechanization College.

IV. Forestry

(1) Forestry; 4-year course, Peking Forestry College, Northeast Forestry College, Northwest Agriculture College, Shantung Agriculture College, Fukien Agriculture College, Anhwei Agriculture College, Mid-China Agriculture College, South-China Agriculture College, Honan Agriculture College, Hunan Agriculture College, Kwangsi Agriculture College, Szechwan University Agriculture College, Yuannan University Agriculture College.

(2) Forest growing; 4-year course, Nanking Forestry College.

(3) Forestry management; 4-year course, Nanking Forestry College.

(4) Forestry engineering; 4-year course, Nanking Forestry College.

(5) Logging and lumber transportation; 4-year course, Northeast Forestry College.

(6) Lumber industry; 4-year course, Northeast Forestry College.

V. Aquariculture

(1) Aquariculture; 4-year course, Shantung University Aquariculture Department.

LIBERAL ARTS

I. Chinese Language and Literature Department; 4-year course, Peking University, Nan K'ai University, Northeast People's University, Futan University, Nanking University, Shantung University, Amoy University, Wuhan University, Chungshan University, Szechwan University, Yuan University, Lanchou University.

II. Linguistic Department; 4-year course, Chungshan University.

III. Journalism Department; 4-year course, Peking University, Futan University.

IV. Russian Department; 3-4-year course, Peking University, Chinese People's University, Northeast People's University, Shantung University, Nanking University, Wuhan University, Chungshan University, Peking Russian Institute, Harbin Foreign Language Institute, Mukden Russian Institute, Shanghai Russian Institute, Southwest Russian Institute, Northwest Russian Institute, Sinkiang Russian Institute.

V. English Department; 4-year course, Peking University, Nanka'i University, Foreign Language School, Futan University, Nanking University, Amoy University, Chungshan University, Yuannan University.

VI. German Department; 4-year course, Peking University, Foreign Language School, Nanking University.

VII. French Department; 4-year course, Peking University, Foreign Language School, Nanking University.

VIII. Spanish Department; 4-year course, Foreign Languages School.

IX. Japanese Department; 4-year course, Peking University.

X. Korean Department; 4-year course, Peking University.

XI. Indonesian Department; 4-year course, Peking University.

XII. Arabic Department; 4-year course, Peking University.

XIII. Minority Languages Department; 4-year course, Central Minority People's College.

XIV. History Department; 5-year course, Peking University; 4-year course, Nanka'i University, Northeast People's University, Futan University, Nanking University, Shantung University, Amoy University, Wuhan University, Chungshan University, Szechwan University, Yuannan University, Northwest University.

XV. Archaeology; 4-year course, Peking University.

XVI. Philosophy; 4-year course, Peking University.

XVII. Psychology; 4-year course, Peking University.

XVIII. Library Science; 3-year course, Peking University; 2-year course, Wuhan University.

SCIENCE

I. Mathematics and Physics

(1) Mathematics department; 5-year course, Peking University; 4-year course, Nanka'i University, Northeast People's University,

Northwest University, Lanchou University, Futan University, Nanking University, Shantung University, Amoy University, Wuhan University, Chungshan University, Szechwan University, Yuannan University.

(2) Mechanics department; 4-year course, Peking University.

(3) Astronomy; 4-year course, Nanking University.

(4) Physics department; 5-year course, Peking University; 4-year course, Nanka'i University, Northeast People's University, Northwest University, Lanchou University, Futan University, Nanking University, Shantung University, Amoy University, Wuhan University, Chungshan University, Szechwan University, Yuannan University.

II. Chemistry Science

(1) Inorganic chemistry department; 4-year course, Peking University, Futan University.

(2) Organic chemistry department; 4-year course, Peking University, Nanka'i University, Northeast People's University, Northwest University, Nanking University, Wuhan University, Chungshan University.

(3) Analytical chemistry department; 4-year course, Peking University, Nanka'i University, Northeast People's University, Northwest University, Lanchou University, Futan University, Amoy University, Wuhan University, Szechwan University, Yuannan University.

(4) Physics and chemistry department; 4-year course, Peking University, Northeast People's University, Futan University, Shantung University, Amoy University, Szechwan University.

(5) Colloid chemistry department; 4-year course, Nanking University.

III. Biology Science

(1) Zoology department; 4-year course, Peking University, Nanka'i University, Futan University, Nanking University, Shantung University, Amoy University, Wuhan University, Chungshan University, Szechwan University.

(2) Human and animal physiology department; 4-year course, Peking University, Futan University.

(3) Botany department; 4-year course, Peking University, Nanka'i University, Northwest University, Lanchou University, Futan University, Nanking University, Shantung University, Amoy University, Wuhan University, Chungshan University, Szechwan University, Yuannan University.

(4) Plant physiology department; 4-year course, Peking University, Futan University.

IV. Geonomy

(1) Natural geography department; 4-year course, Peking University, Northwest University, Lanchou University, Chungshan University.

(2) Geography Department; 4-year course, Nanking University.

(3) Geology department; 4-year course, Nanking University.

(4) Meteorology department; 4-year course, Peking University, Nanking University; 2-year course, Nanking University, Peking Meteorology Institute.

(5) Oceanography; 4-year course, Shantung University.

GOVERNMENT AND LAW

I. Law; 4-year course, Chinese People's University, Peking University, Northeast People's University, Futan University, Wuhan University; 2-year course, Northwest University (law department).

II. Government and Law; 3-year course, Peking Government and Law College, East-China Government and Law College; 2-year course, Mid-South Government and Law College, Southwest Government and Law College.

III. International Law; 4-year course, Chinese People's University.

FINANCE AND ECONOMICS

I. Political Economics Department; 4-year course, Chinese People's University, Peking University, Northeast People's University, Futan University, Amoy University, Wuhan University, Szechwan University.

II. People's Economical Planning Department; 4-year course, Chinese People's University, Northeast Finance and Economics College, Shanghai Finance and Economics College, Mid-South Finance and Economics College, Szechwan Finance and Economics College.

III. Industrial Economics Department; 4-year course, Chinese People's University, Northeast Finance and Economics College, Shanghai Finance and Economics College, Mid-South Finance and Economics College, Szechwan Finance and Economics College.

IV. Agronomy Department; 4-year course, Chinese People's University.

V. Statistics Department; 4-year course, Chinese People's University, Nanka'i University, Northwest University, Amoy University, Northeast Finance and Economics College, Shanghai Finance and Economics College,

Mid-South Finance and Economics College, Szechwan Finance and Economics College.

VI. Accounting Department; 4-year course, Nanka'i University, Northwest University, Amoy University, Northeast Finance and Economics College, Shanghai Finance and Economics College, Mid-South Finance and Economics College, Szechwan Finance and Economics College.

VII. Finance Department; 4-year course, Chinese People's University, Shanghai Finance and Economics College, Mid-South Finance and Economics College.

VIII. Money and Credit Department; 4-year course, Chinese People's University, Shanghai Finance and Economics College.

IX. Foreign Trade and Foreign Trade Translation Department; Peking Foreign Trade Institute (4-year course in Foreign Trade; 3-year course in Foreign Trade Translation).

X. Domestic Trade Department; 4-year course, Chinese People's University, Northeast Finance and Economics College, Shanghai Finance and Economics College.

XI. Producers' Cooperatives Department and Supply and Consumers' Cooperatives; 4-year course, Chinese People's University, Northeast Finance and Economics College, Mid-South Finance and Economics College.

XII. Railroad Statistics Department and Railroad Accounting Department; 4-year course, Peking Railroad Institute.

XIII. Labor Economics; 2-year course, Chinese People's University.

ATHLETICS

Athletics Department; 2-year course, Central Athletics School, East-China Athletics School, Mid-China Athletics School, Southwest Athletics School, Northeast Athletics School, Northwest Athletics School, North-China Athletics School.

ARTS

(Piano and string instrument departments are combined into the instrument department.)

I. Composition Department

Central Music College (4), Northeast Music School (2), Central Music College, East-China Branch (4), Mid-South Music School (2), Southwest Music School (2), Northwest Music School (2), East-China Art School (2)

II. Vocal Department

Central Music College (4), Northeast Music School (2), Central Music College, East-China Branch (4), Mid-South Music School (2), Southwest Music School (2), Northwest Art School (2), East-China Art School (2)

III. Piano Department

Central Music College (4), Northeast Music School (2), Central Music College, East-China Branch (4), Mid-South Music School (2), Southwest Music School (2), Northwest Art School (2), East-China Art School (2)

IV. String Instrument Department

Central Music School (4), Northeast Music School (2), Central Music College, East-China Branch (4), Mid-South Music School (2), Southwest Music School (2), Northwest Art School (2), East-China Art School (2)

V. Dramatics Department

Central Dramatic College (4), Central Dramatic School, East China Branch

VI. Dramatic Literature Department

Central Dramatic School (4)

VII. Stagecraft Department

Central Dramatic School (4), Central Dramatic School, East-China Branch (4)

VIII. Directing Department

Central Dramatic School (4)

IX. Drawing Department

Central Art School (4), Central Art School, East-China Branch (4), Northeast Art School (2), Mid-South Art School (2), Southwest Art School (2), East-China Art School (2), Northwest Art School (2)

X. Sculpture Department

Central Art School (4), Central Art School, East-China Branch (4), Northeast Art School (2), Mid-South Art School (2), Southwest Art School (2), East-China Art School (2), Northwest Art School (2)

XI. Sketching Department

Northeast Art School (2), Mid-South Art School (2), Southwest Art School (2), Northwest Art School (2)

Sanitized Copy Approved for Release 2010/07/08 : CIA-RDP81-01043R000400130004-5